

PULP & PAPER

FEBRUARY 1951

Vol. 25

No. 2

The Cellulose Age



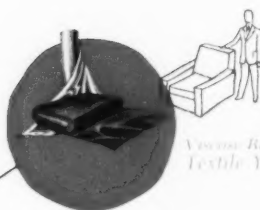
**PULPWOOD FOR THE FUTURE—8,000-15,000 PLANTINGS
PER DAY IN MINNESOTA. STORY IN PULPWOOD SECTION.**



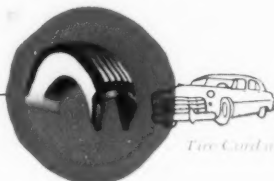
HIGHLY PURIFIED WOOD CELLULOSE

is a chemical raw material produced by Rayonier by chemically processing wood in our mills. It is used by our customers for conversion to a variety of useful products.

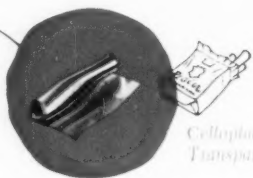
Rayonier research over a period of years has resulted in development of specialized types of wood cellulose, each with physical and chemical characteristics which assure best results in making the end products for which it is used.



*Viscose Rayon and Acetate
Textile Yarns and Fiber*



Tire Cord and Fabric



*Cellophane and other
Transparent Materials*

RAYONIER

INCORPORATED

PRODUCERS OF HIGHLY PURIFIED WOOD CELLULOSE FOR TEXTILES, TIRE CORD, CELLOPHANE, PLASTICS

EXECUTIVE OFFICES: 122 East 42nd Street, New York 17, N.Y.

MILLS: Hoquiam, Port Angeles, Shelton, Washington; Fernandina, Florida

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NEW Easy to Clean Resists Corrosion

WITH THIS NEW *Safety Circle* totally-enclosed fan-cooled motor, you can cut maintenance requirements on your product to a new low. For here is a TEFC motor that cannot clog.

A powerful fan blows cooling air over the finned exterior of the motor. Internal air passages with their dirt-catching pockets are eliminated. If sticky dirt makes cleaning necessary, it is the simplest of maintenance operations which can be done in a few minutes with an air hose. Unrestricted air flow reduces power loss and windage noise.

Cast Iron Frame

The frame of this new *Safety Circle* totally-enclosed fan-cooled motor is solid

cast iron with the well-known rigidity and inherent corrosion resistance that only cast iron has. Bearings are lubricated at the factory and operate without attention or cost for years.

Nation Wide Service

There are 86 Allis-Chalmers Certified Service Shops in industrial cities all over the country to give your customers factory approved service and parts wherever they may be. An Allis-Chalmers representative familiar with designers' problems will be glad to show you the complete details of this motor. Just call your nearest Allis-Chalmers Sales Office or use the coupon at the right to send for bulletins.

**Allis-Chalmers
Milwaukee 1, Wis.**

Please send me:

Handy Guide for Electric Motors
Bulletin 5186052
Flange Motor Specifications Sheet
5157234
Safety-Circle Motors Bulletin 5186210

Name _____

Title _____

Company _____

Street _____

City _____

State _____

A-3234

Safety Circle is an Allis-Chalmers trademark.

ALLIS-CHALMERS



FEBRUARY 1951



make preference for a reason your guide when you specify ball and roller bearings



Over the years, products acquire a value above and beyond their mechanical qualities—a value proved by their acceptance throughout industry. This is especially true of SKF ball and roller bearings, preferred by all industry for one or more of eight good reasons. So when you specify, let preference be your guide. 7200

SKF
BALL AND ROLLER BEARINGS

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
—manufacturers of SKF and HESS-BRIGHT bearings.

LET'S LOOK AT THE **FACTS**

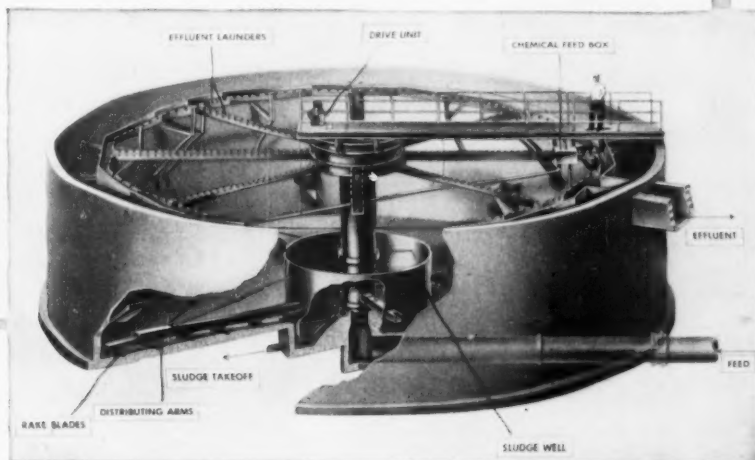
when selecting **HIGH-RATE** units for industrial water treatment!

You want the best . . . when you select high-rate units for the removal of hardness, turbidity, color or algae from your process water.

Here are six basic reasons why you should select Dorco Hydro-Treators . . . for the best results . . . at lower cost:

- ✓ Uniform, low turbidity effluent
- ✓ Positive, continuous sludge removal
- ✓ No "slug loading" on adjacent streams
- ✓ Exceptionally low moisture content in discharged sludge
- ✓ Low installed cost
- ✓ Minimum power requirements

THE DORCO HYDRO-TREATOR
Overflow launder arrangement illustrated used on larger sizes. Arrangement varies with size of unit.



If you are investigating high-rate, up-flow type units for industrial water treatment, get all the facts before deciding. A Dorr engineer will gladly supply detailed figures and operating results . . . at no obligation.

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BARRY PLACE, STAMFORD, CONN.

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ASSOCIATES AND REPRESENTATIVES
Dorr Technical Services and Equipment Are Also Available Through Associated Companies and Representatives in the Principal Cities of the World. Names and Addresses on Request.

CHEMICAL USERS' GUIDE To General Chemical Products for the Paper Industry

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTH (MIN.)	SHIPPING CONTAINERS	APPLICATIONS
Aluminum Sulfate $\text{Al}(\text{SO}_4)_3 \cdot 14\text{H}_2\text{O}$ approx. (Alum)	Commercial & Iron Free: Lump, Ground Powdered	17.25% Al_2O_3	Bags Bulk Carloads	Precipitation of rosin size and filler; water clarification; manufacture of satin white; pitch control; mordant for dyes.
Aluminum Sulfate $\text{Al}(\text{SO}_4)_3$ + water (Liquid Alum)	Liquid	32° Be (total Al_2O_3 7.2%)	Tank Trucks Tank Cars	Same as commercial dry product but lower strength.
Salt Cake Na_2SO_4 (Sodium Sulfate)	White or Grayish Granules	95.99% Na_2SO_4	Bags Bulk Carloads	Used in kraft cooking liquors as the source of Na_2S .
Glauber's Salt, Crystal $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ (Sodium Sulfate)	Colorless Crystals	96% $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ (42.3% Na_2SO_4)	Bags Barrels Fibre Drums	Substitute for salt cake in kraft cooking liquor.
Glauber's Salt, Anhydrous Na_2SO_4 (Sodium Sulfate)	White Granules	99.5% Na_2SO_4	Bags Bulk Carloads	Same as Crystal but stronger product.
Sulfuric Acid H_2SO_4	Liquid	66° (93.19%), 99% 20% oleum and higher strengths	Carboys Steel Drums Tank Trucks Tank Cars	Wire sizing; parchmentizing; acid wash in last stage of multi-stage pulp bleaching; neutralizing tall oil soaps.
Sodium Thiosulfate $\text{Na}_2\text{S}_2\text{O}_5 \cdot 5\text{H}_2\text{O}$ (Hypo)	Colorless Crystals	99.75% $\text{Na}_2\text{S}_2\text{O}_5 \cdot 5\text{H}_2\text{O}$	Bags Fibre Drums	Anti-chlor.
Sodium Sulfite, Anhydrous Na_2SO_3 (Sulfite)	White Powder	98.5% Na_2SO_3	Bags Fibre Drums	Anti-chlor.
Sodium Silicate $\text{Na}_2\text{O} \cdot \text{XSiO}_2$ + water (Water Glass)	Liquid	38°, 41°, 42° Be; special and higher strengths	Steel Drums Tank Cars Tank Trucks	Adhesive for corrugated and solid fibre board; used in coating mixtures to reduce viscosity and in beater sizing to stiffen paper. Aid in bleaching & flocculation.
Chromium Potassium Sulfate $\text{K}_2\text{SO}_4 \cdot \text{Cr}_2(\text{SO}_4)_3 \cdot 24\text{H}_2\text{O}$ (Potash Chrome Alum)	Red Violet Crystals	99.5% $\text{K}_2\text{SO}_4 \cdot \text{Cr}_2(\text{SO}_4)_3 \cdot 24\text{H}_2\text{O}$	Fibre Drums	Used in "save-all" or white water systems.
Aqua Ammonia NH_4OH + water (Ammonia)	Colorless Liquid	26° Be (29.4% NH_3)	Carboys Steel Drums Tank Trucks	Used with chlorine to form chloramines for slime control.
Sodium Fluoride	Powder	90% NaF 95% NaF	Fibre Drums	Preservative and stabilizer for starch in coating mixtures.
Tetrasodium Pyrophosphate, Anhydrous $\text{Na}_4\text{P}_2\text{O}_7$ (TSPP) (Pyro)	White Powder	98% $\text{Na}_4\text{P}_2\text{O}_7$ (Equiv. 52% P_2O_5)	Bags Fibre Drums	Felt washing; pitch dispersion.
Nitric Acid HNO_3 + water	Liquid	42° Be 67.2% HNO_3	Carboys Drums Tank Trucks	Nitrating pulp; cleaning metal.
Sodium Sulfide Na_2S + water	Red Chips or Solid Mass	60% Na_2S	Steel Drums	Substitute for salt cake in modified soda process.



The products advertised are common in chemical having various uses, some of which may be covered by patents, and the user must accept full responsibility for compliance therewith.
OTHER PRODUCTS: Hydrochloric Acid; Sodium Metasilicate; Trisodium Phosphate; Copper Sulphate; Disodium Phosphate.
FOR THE LABORATORY OR SPECIAL APPLICATIONS: BAKER & ADAMSON REAGENTS and FINE CHEMICALS

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40 RECTOR STREET, NEW YORK 6, N. Y.

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Overcome Corrosion, Heat and Abrasion in Your PULP MILL

Wepac bottom blow fitting out
of Alloy 40 (AMS type 317)
for service involving severe cor-
rosion, vibration and abrasion.



Lower operating costs, fewer shutdowns and increased production are the rewards for overcoming the three headaches of corrosion, heat and abrasion.

And here is the easy way to do it—turn the problem over to ESCO, and let them work it out.

Through 20 years experience in casting stainless and high alloy steels, ESCO metallurgists have encountered a multitude of problems in corrosion, heat and abrasion. These are studied individually, and regular or special

analyses best suited to the particular application are selected.

ESCO engineering facilities are available when desired for designing equipment of whatever size and character may be wanted. Manufacturing facilities are adequate for any production, and processes of manufacture at all times are under close control of the metallurgical laboratory.

ESCO welcomes consultation with pulp mills on problems of corrosion, heat and abrasion. See the ESCO office nearest you or write us direct. Our catalog of stainless and high alloy steels in process equipment is available upon request. Use the coupon.

ESCO STAINLESS AND
HIGH ALLOY STEELS

ELECTRIC STEEL FOUNDRY

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EUGENE, OREGON	NEW YORK CITY, N. Y.
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IN CANADA — **ESCO** LIMITED, VANCOUVER, B.C.

ELECTRIC STEEL FOUNDRY

2166 N.W. 25th Avenue, Portland 10, Oregon

Please send me your catalog on stainless and high alloy steels in process equipment.

Name

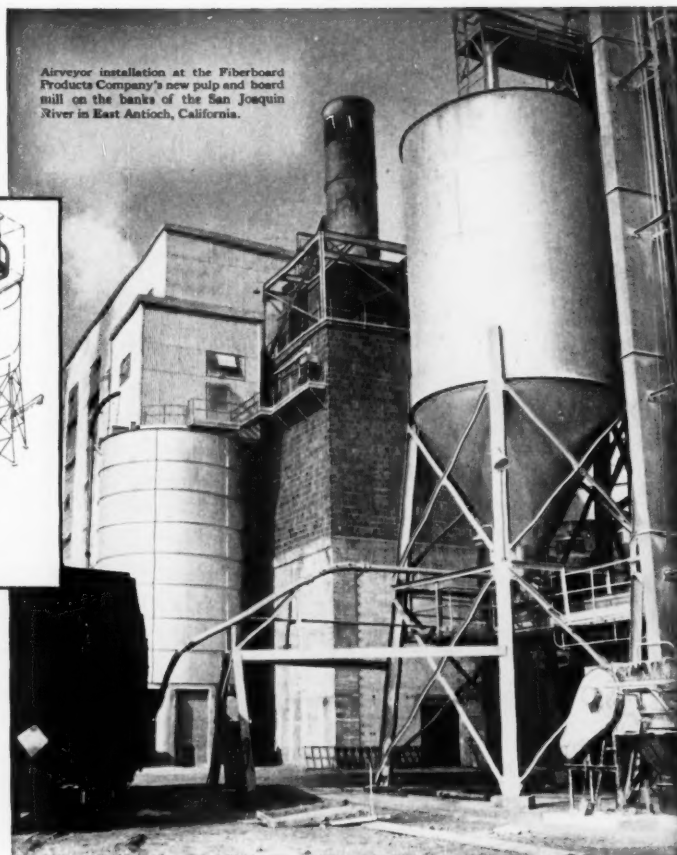
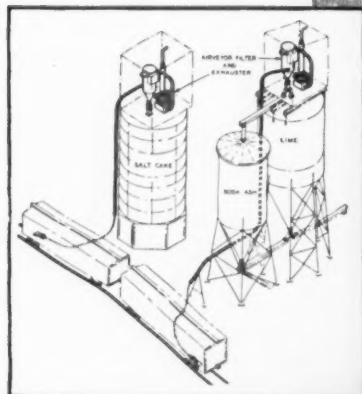
Company

Address

City

Zone State

Airveyor installation at the Fiberboard Products Company's new pulp and board mill on the banks of the San Joaquin River in East Antioch, California.



Keep unloading and storage costs down with **AIRVEYORSM**

Conveying dry, pulverized materials such as lime, soda ash and salt cake with the Airveyor offers many concrete savings you can't afford to overlook . . . reduced purchase price of bulk over bagged materials . . . reduced cost of unloading and storing bulk materials. Clean and dustless operation, rapid unloading, minimum labor and convenience in storing and reclaiming . . . are just a few of the pertinent advantages which this modern, pneumatic method of conveying provides.

When you have a bulk materials-handling problem, may we suggest you allow us to make a study of your conditions. No two jobs are identical. The selection of the proper equipment and layout best adapted to satisfy any individual set of conditions, should be made by conveying specialists. This will eliminate any time-consuming and costly preliminary surveys by your staff. We are prepared to submit a recommendation, or engineering study, proposal drawings and estimate, for your approval. No obligation, of course.

DRY MATERIAL CONVEYING SYSTEMS AND COOLERS—
COMPRESSORS AND VACUUM PUMPS—
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fuller

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CLEAN PAPER GETS THE PRICE

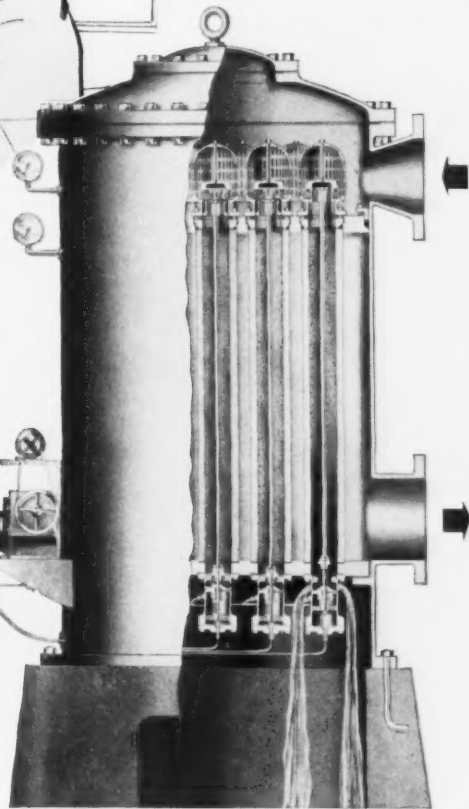


ADAMS WATER FILTRATION GETS THE DIRT

In kraft or tissue, book or newsprint—water quality is as critical as chip quality. No matter what grade of pulp or paper you make, sand, grit and pipe scale are expensive when they keep your product out of the top price brackets.

Water filtration with the fully automatic Adams Poro-Screen or Poro-Stone Filter takes out price-lowering impurities *before* they become part of the stock. Continuous backwashing effectively prevents clogging of filter elements—avoids costly, cumbersome cleaning operations.

Remember—in its early stages your product is



about 98% water, and most water-borne impurities stay with the stock.

Find out what Adams filtration has done in situations like yours. Write for the new 20 page booklet on water filtration in the Pulp and Paper Industry, Bulletin No. 691.

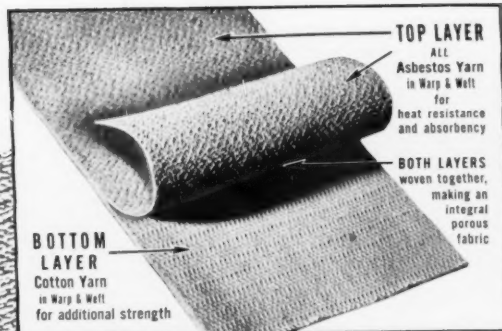
R. P. ADAMS COMPANY, INC.

210 EAST PARK DRIVE, BUFFALO 17, N. Y.

FEBRUARY 1951

ASTEN

dryer felts



Vur-r-a

ECONOMICAL

The sheet side of ASTEN Dryer Felts has asbestos yarn in both directions, giving full protection from the hot dryers. As a result, they last longer and give a lower cost per ton. If you're a *canny* man that likes *mickle* profits, you'll use ASTENS in your mill.

ASTEN-HILL MFG. CO.
PHILADELPHIA, PENNA.



ASTEN-HILL, LTD.
VALLEYFIELD, QUEBEC

Bingham

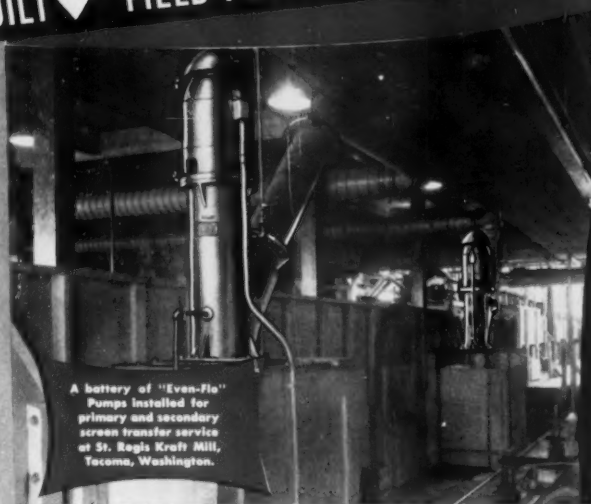
PRECISION BUILT FIELD PROVEN PUMPS

"Even-Flo" Pumps WILL NOT BECOME Airbound

Bingham "Even-Flo" Pumps discharge with an even non-pulsating flow regardless of variation in supply. An outstanding feature of the Bingham "Even-Flo" Pump is maintaining a constant liquid level at the suction no matter how varied the incoming supply may be.

Bingham "Even-Flo" Pumps are being used effectively in the Pulp and Paper industry for such services as: • Primary and Secondary Screen Transfer • Seal Pits for Barometric Legs • White Water and Stock Chests • Mill Sewage and Waste Liquor Sumps • Sludge Collecting Chests • Acid Sumps • Fan Pump • Washers • Save-Alls

Bingham "Even-Flo" Pumps, like all Bingham products, are precision built in our new, modern plant. All rotating parts are dynamically balanced. All parts requiring close tolerances are ground on heavy duty precision grinders. Each part is subjected to rigid inspection by craftsmen who for years have been trained to follow Bingham's high standards of manufacture.



SEND
NOW

FOR "EVEN-FLO" FOLDER NO. 36
It gives detailed information
on this remarkable pump.



PUMPS

SINCE 1921

GENERAL OFFICES:
705 S.E. Main Street
Portland, Oregon

FACTORIES:
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Sales and Service Offices: BOSTON, MASS., 113 Broad Street • CHICAGO, ILL., 275 Old Colony Bldg., 407 South Dearborn Street • HOUSTON, TEX., 1206 Union National Bank Bldg. • MIDDLETON, OHIO, 505 Federal Savings & Loan Bldg. • NEW YORK CITY, N. Y., 611 Graybar Bldg., 420 Lexington Ave. • PITTSBURGH, PENN., 102 Mt. Lebanon Blvd. • SAN FRANCISCO, CALIF., 420 Market St. • SEATTLE, WASH., 316 Joseph Vance Bldg., 1402 Third Ave. • ST. LOUIS, MO., 2533 Salem • ST. PAUL, MINN., 205 South Robert St. • TULSA, OKLA., 200-206 N. Denver St. • VANCOUVER, CANADA, 3550 E. Broadway.



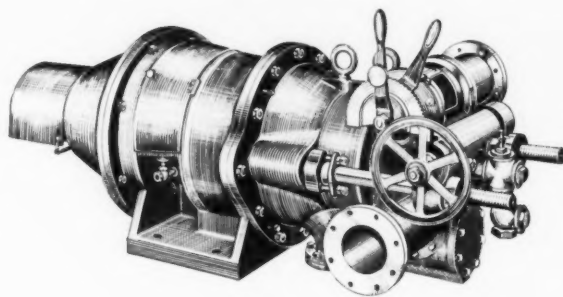
"we're ordering *More MORDENS*"

50% or better of the Morden "Stock-Makers" ordered during the last four years have been on repeat orders from old customers. Customers who have proved "Stock-Makers" superior performance in comparison with other equipment.

Nearly 500 "Stock-Makers" have been installed throughout the world during the last 15 years. Over 400 of these "Stock-Makers" have been installed during the last 4 years.

Such universal acceptance of "Stock-Maker" argues well for your investigation of the benefits to be gained from "Stock-Maker's" beating and refining.

PLAN TO ATTEND



MORDEN MACHINES COMPANY

PACIFIC BUILDING, PORTLAND 4, OREGON

In Europe: Millspaugh, Limited Sheffield, England

In South America: Parsons & Whittemore, Inc. New York City

In Canada: The William Kennedy & Sons, Ltd., Owen Sound, Ontario

Monel Winding Wire and Structural Rods help keep 'em running for a long time...

Your paper machines will last only as long as the metals in them.

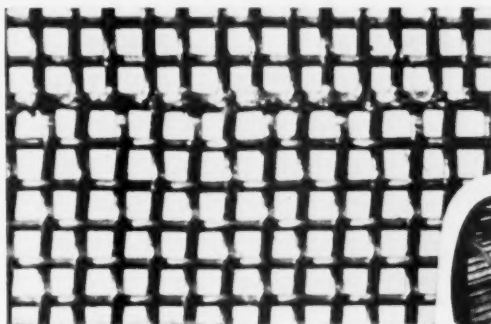
Which means, of course, that metals — today one of our most precious national assets — should be chosen with care.

On this page are examples of how one metal, Monel®, has been used to cut maintenance costs and extend the service life of paper and board-making equipment. Monel offers high strength and ductility, and exceptional resistance to corrosion by most commonly-encountered industrial chemicals. Monel is readily workable and weldable. It is produced in a variety of mill forms including wire, wire cloth, and fastenings.

Because of current military needs, you may not be able to buy all the Monel you need, but INCO's Technical Service Department is always ready to help you solve corrosion problems.

Write for your copy of: "How to Eliminate Unnecessary Shutdowns"—written especially for paper mill men.

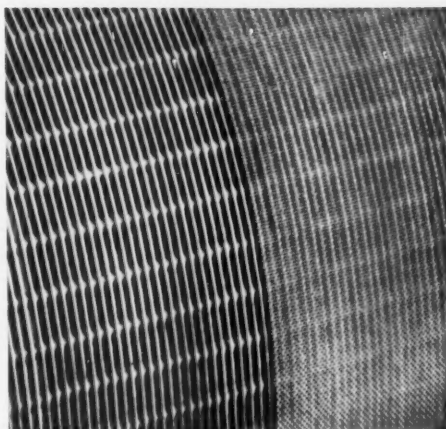
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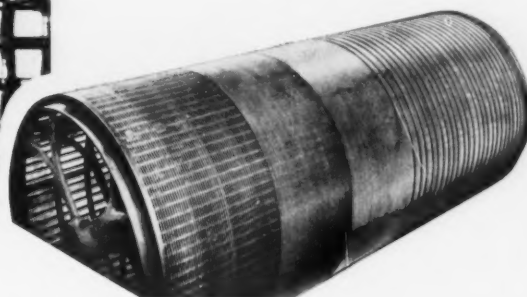
Monel roll covers resist both corrosion and mechanical fatigue, giving long and trouble-free service. Monel can be readily silver soldered. Monel cloth is produced in standard weaves, meshes, and widths.

Here are some typical service records:

1. Soda Brown Stock Washer. Monel cover still good after 22 months operation.
2. Soda Pulp Thickeners. 72 months service from one Monel cover; second in good condition after 25 months use.
3. Sulfate Pulp Thickeners. Monel has given 5 years service without failure on combined thickeners and washers.
4. Sulfite Mill. A mill which got 180 days service from bronze covers now gets 370 days service from Monel on #1 and #2 sulfite deckers.



Monel Winding Wire. Cold drawn Monel wire is used over structural rods of cylinders, over drainage strips of drums, and as binding wire over wire cloth faces of filters. For this service, Monel wire is furnished with tensile strength of 110,000 to 140,000 psi. The endurance limit of Monel or its resistance to fatigue is much higher than most other non-ferrous alloys. It is so ductile that it can be wrapped around its own diameter without cracking. Where needed, smooth splices can be made by brazing or welding.



Monel structural rods, used in drums, make strong, rigid, corrosion-resisting assemblies that need little attention. Monel structural rods have 26,000,000 psi modulus of elasticity, and 85,000 psi tensile strength.

• • •

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

MONEL... for Minimum Maintenance

POWELL RIVER

UNBLEACHED SULPHITE PULP

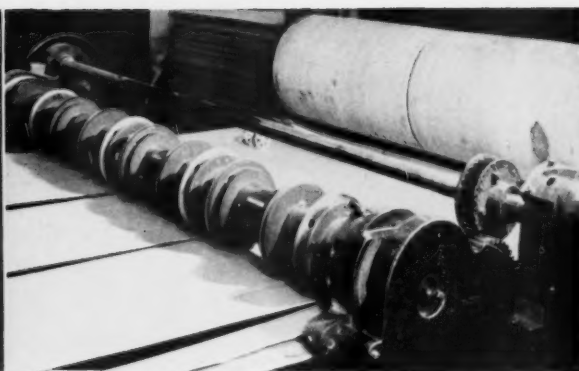


- ★ STRENGTH
- ★ COLOR
- ★ SERVICE
- ★ DEPENDABLE
SUPPLY

**POWELL RIVER
SALES COMPANY
LIMITED**

1204 STANDARD BUILDING • VANCOUVER, B. C.

**Through
Thick
and Thin...**



SIMONDS Circular Cutters

***Stand up...cut clean
...stay sharp longer!***



Simonds Circular Cutters, Slitters and Perforators are made to meet today's high level, continuous production requirements....give long, trouble-free performance in all types of applications from corrugated to tissue....shear cut or score cut....solid, cut-in-half or Cameron design. Made of Simonds edge-holding Electric Furnace Steel, scientifically heat-treated and precision ground so that they are absolutely round and of uniform thickness, Simonds Cutters run smooth and true....stay on the job through thick and thin....save you money in the long run. That's

why it's smart to always say "Simonds" when you need Cutters. All sizes and types accurately made to machine manufacturer's specifications. Order through your local Simonds Distributor.



FITCHBURG, MASS.

Branch offices in Boston, Chicago, Los Angeles, San Francisco and Portland, Ore. Canadian Factory in Montreal, Que.

In The Paper Industry
WESTERN PRECIPITATION
COTTRELL EXPERIENCE IS UNSURPASSED

— Because Western Precipitation pioneered the first COTTRELL Installation in a Paper Plant!



In the design and installation of COTTRELL Electrical Recovery equipment there is no substitute for experience. And it is important to remember that the Western Precipitation organization not only pioneered the first successful COTTRELL installation made in any industry, but also pioneered the first COTTRELL installation made in the paper industry.

This installation, made over 30 years ago, blazed the trail for use of COTTRELL equipment for recovering dust and fume from black liquor furnace gases in modern paper plant operations.

Let us show you how Western Precipitation's consistent leadership in COTTRELL "know-how" assures you the most modern advancements and the most economical operations in your electrical recovery operations.

◀ Western Precipitation knows COTTRELL equipment as no other organization does, having pioneered the first commercial application of COTTRELL equipment made in any industry!

◀ Western Precipitation knows COTTRELL applications in paper operations because its widespread experience in this field dates from the pioneer COTTRELL installation made in the paper industry!

◀ Western Precipitation is able to give you an unbiased recommendation on your recovery requirements, for in addition to leadership in the electrical recovery field—Western Precipitation also leads in the mechanical recovery field with its widely-known MULTICLONE Mechanical Collectors. Western Precipitation installed the first MgO plant.

Whether your operations call for electrical recovery . . . or mechanical recovery . . . or both working in combination—Western Precipitation can design and install the type best suited to your needs—under one guarantee and one responsibility!

Write for descriptive literature on Western Precipitation products and experience.

Regardless of the size or nature of your dust or fume recovery application, let us study your requirements and make an unbiased recommendation based on over 30 years experience in the paper industry. Call, write or wire our office nearest you.

Except for its wholly-owned subsidiaries, The Precipitation Corporation of Canada and The International Precipitation Corporation, Western Precipitation Corporation is not affiliated, either directly or indirectly, with any other organization in the electrical or mechanical recovery field.

WESTERN
Precipitation
CORPORATION

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FOR BETTER SAFER HANDLING OF CHLORINE

CRANE FORGED STEEL GLOBE AND ANGLE VALVES

Made exclusively for chlorine gas and liquid lines, Crane Forged Steel Globe and Angle Valves give safe and dependable service under all working conditions. Body and bonnet materials are more than strong enough to withstand severe internal and line stresses... trim metals are the most practical and efficient for combating the corrosive action of chlorine. For a point by point analysis of these performance-proved Crane Chlorine Valves, see the features below.

PRESSURE-TIGHT CLOSURE—45° narrow bearing seat gives high unit pressure to break down hard deposits on seating surfaces; assures tight closing.

TIGHT STEM SEAL—Deep stuffing box is filled with chlorine service-tested packing. Can be repacked under pressure when valve is wide open.

EXTRA TIGHT BONNET JOINT—Male and female bolted bonnet joint retains corrugated soft Monel gasket; reduces danger of leaks.

PREFERRED CORROSION-RESISTANT DESIGN—Outside Screw and Yoke construction keeps stem threads out of contact with line fluids, simplifies thread lubrication.

TESTING—These valves are specially tested at 300 pounds air-under-water.

SEND FOR CIRCULAR No. 320

For further information about these and other Crane corrosion-resistant valves—ask your Crane Representative or write for your copy of Corrosion-Resistant Piping Materials Circular No. 320. No obligation.

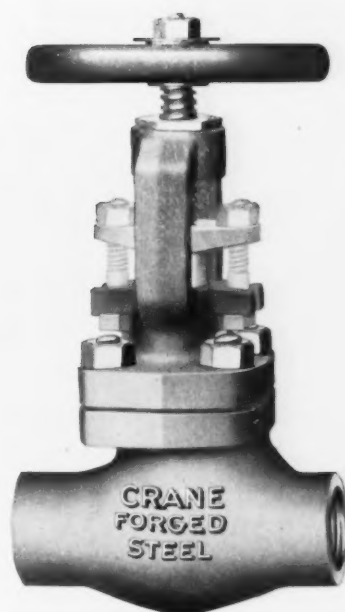
CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas



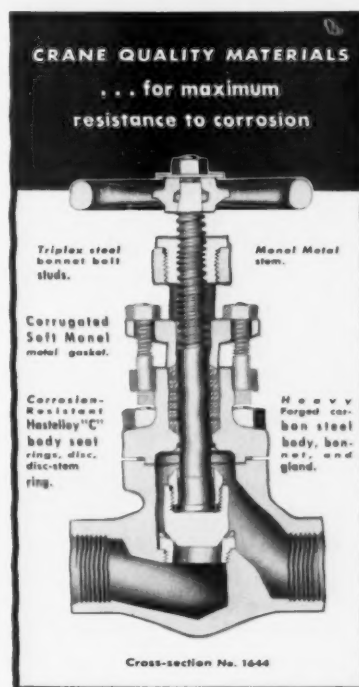
EVERYTHING FOR EVERY PIPING SYSTEM

CRANE

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING



No. 1644, Forged Steel
Globe for water-free chlorine services
up to 300° F. Sizes: ½ to 2-in.
Also in Angle patterns, No. 1645



What is

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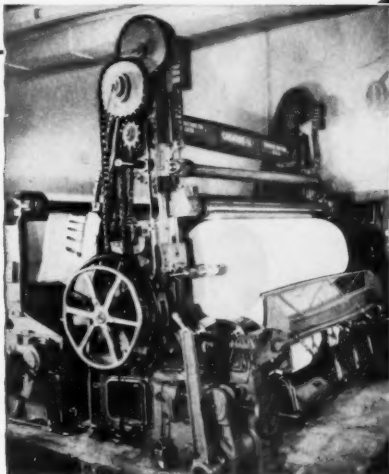
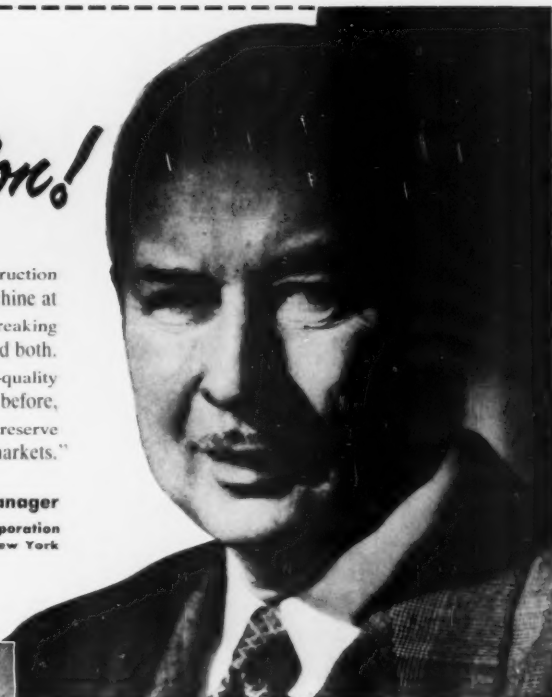
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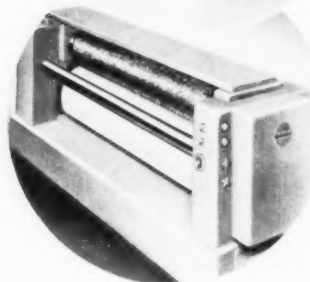
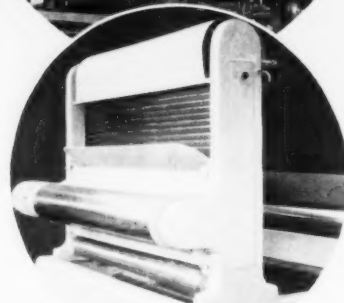
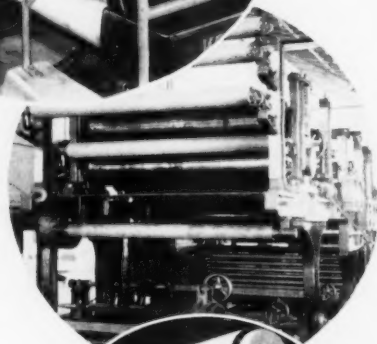
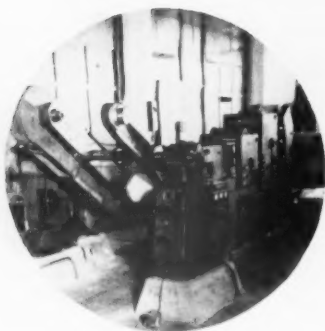
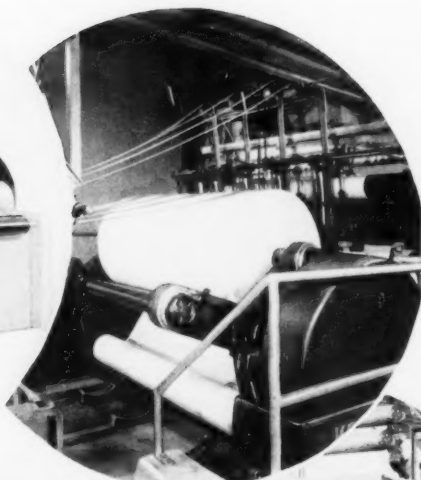
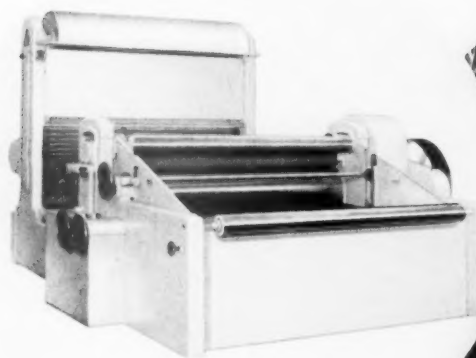
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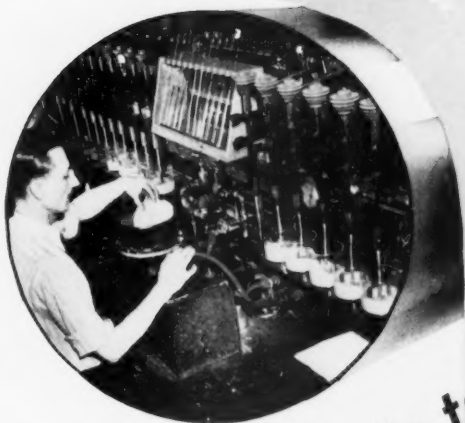
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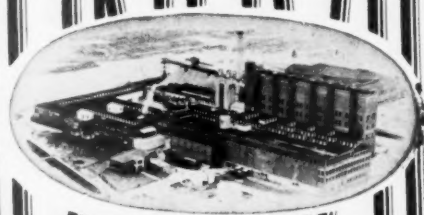
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In all important paper producing areas of the United States and Canada you will find C-E Vertical-Unit Boilers in the plants of leading pulp and paper manufacturers. A partial list of the companies that have purchased VU Units appears at the left. In many cases these companies have placed repeat orders. B-442



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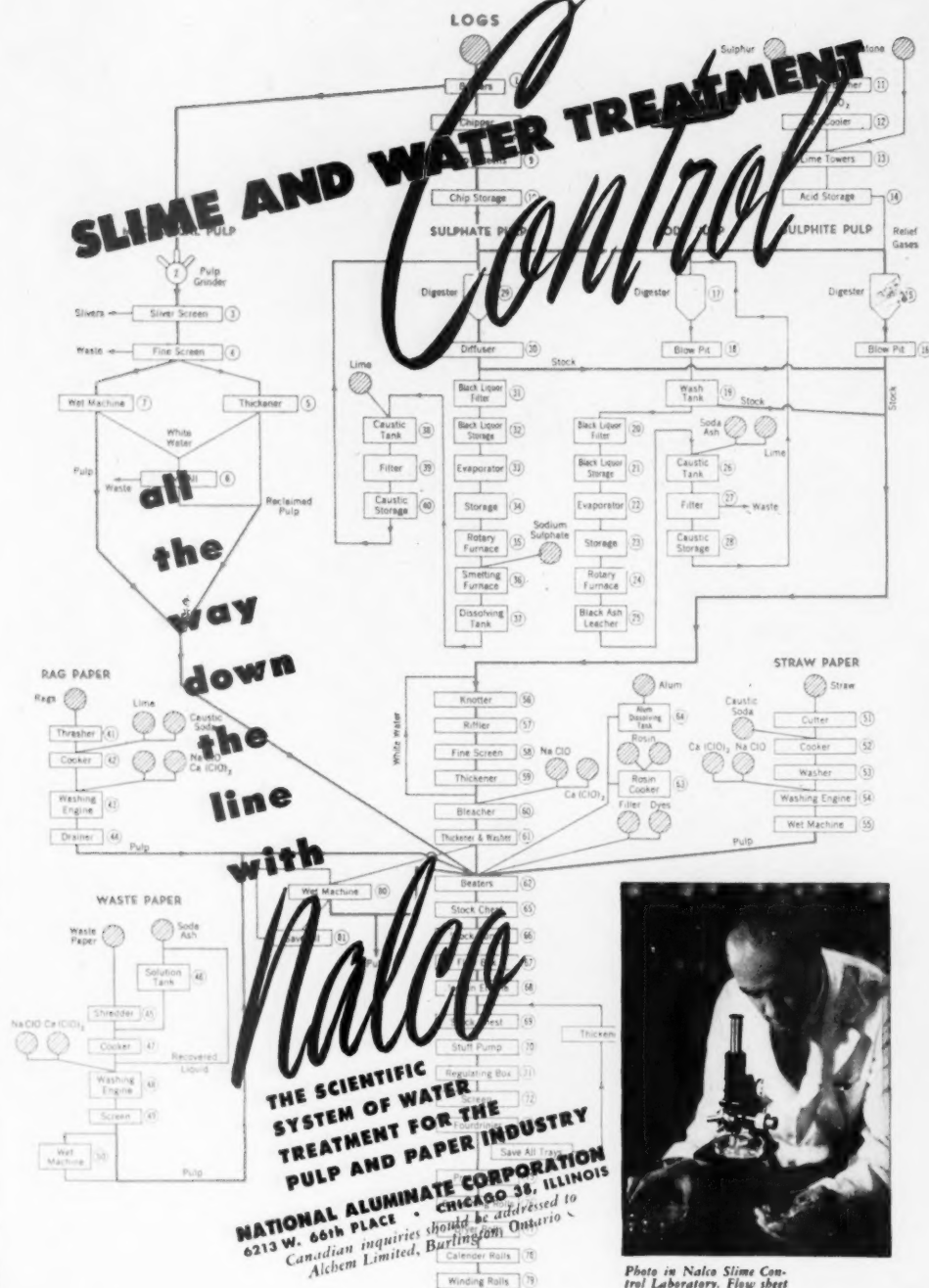
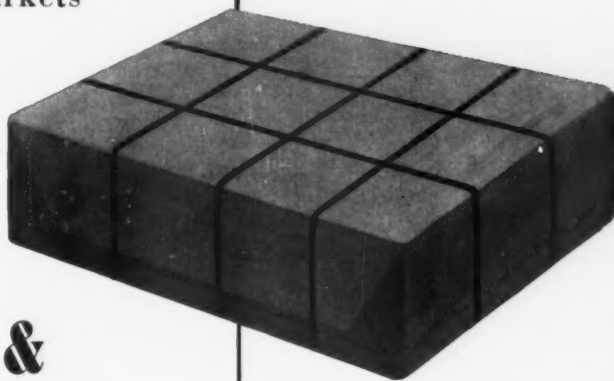


Photo in Nalco Slime Control Laboratory. Flow sheet courtesy of International Nickel Company.

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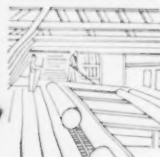
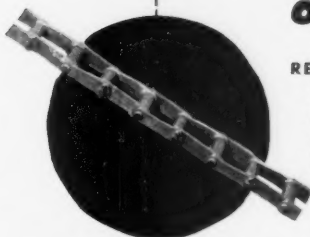
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Chain Facts

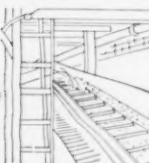
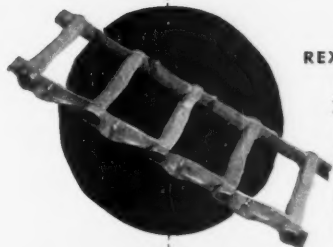
on **REX** pulp mill chains

REX COMBINATION AND DUROBAR CHAINS



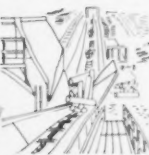
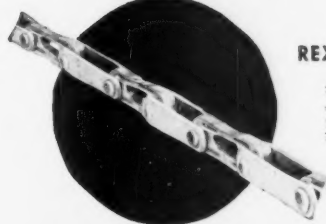
are husky chains with inside block links of malleable iron or Rex Z-Metal and side bars blanked from high carbon steel. Side bar pin holes are accurately punched for correct pitch and good drive fits. Milled flats on the ends of the pins prevent turning in the side bars and prolong chain life. Durobar Chains have reinforced outer barrel faces which eliminate rolling, grinding contact with sprocket teeth and thus reduce chain wear.

REX H-TYPE CONVEYOR CHAINS



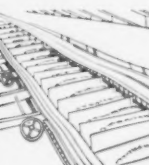
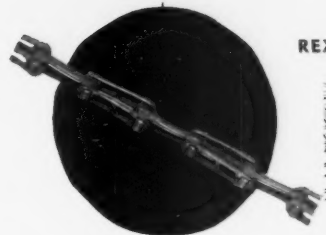
offer an efficient, economical means for conveying slabs, sawdust and other mill refuse. Operating in shallow troughs, these chains, because of their great width, offer the advantage of large capacity at low speeds. Chain links are one-piece castings. Inner barrel faces are designed for smooth operation over sprockets. Outer barrel faces are designed to act as scrapers. Wide wearing shoes, cast on the side bars, take the sliding wear, and vertical lugs reinforce and protect rivet ends.

REX MILL REFUSE AND LOG CONVEYOR CHAINS



are stronger, tougher chains designed specifically for longer life under the pounding of logs and slabs. Alternating wide cast block links and steel side bar links combine rugged strength and a large sliding surface as well as maximum bearing area on the rivets. Cast block links are of heavy design, reinforced with two struts that provide a sturdy anchorage for scraper or chair attachments.

REX DROP FORGED CHAINS

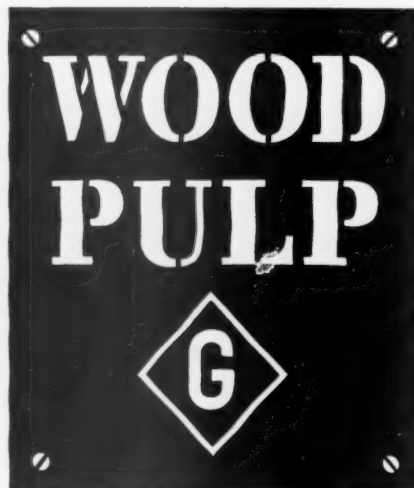


are preferred for log haul and refuse conveyor service where high strength and relatively low cost are desired. Drop Forged Chains are flexible in two directions, and assembly and disassembly can be made without the use of tools. Chain parts are forged from high carbon steel and are carefully designed for large bearing areas and wearing surfaces. Links can be turned over to provide a new sliding surface after long service.

For the complete story on the complete Rex line of pulp mill chains, call your Rex District Office or write direct for Catalog 48-27. Chain Belt Company, 1691 W. Bruce St., Milwaukee 4, Wis.



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"The Cellulose Age"
PRODUCTION AND MANAGEMENT JOURNAL
OF THE
NORTH AMERICAN PULP AND PAPER INDUSTRY

A MILLER FREEMAN PUBLICATION

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South Loses Outstanding Leader

With the death of James H. Allen, vice chairman of St. Regis, there passed from the scene one of Southern pulp and paper industry's most dynamic characters whose memory the South's forest owners could well perpetuate with a fitting testimonial.

Born in Arkansas 70 years ago when semi-frontier conditions prevailed, he started in the lumber industry at an early age. In those days, sawmill was king, and forest swept almost unbroken. By 1903 he was operating his own mill in Bastrop, La.

Times were rough, the greater percentage of men carrying guns. A Confederate veteran advised Jim: "Never leave a man mad; if you must shoot, shoot first and straight; if you must fight, hit first and hard. If it's a fist fight, stay with it until the man is satisfied; leave him with a grudge and he'll come back with a gun."

Torn between the temper of the times and the urging of his mother not to fight, Jim admitted a few years ago that he had experienced 30 fights; regretted he hadn't "pasted" two others. In those days if an argument or difference couldn't be settled at the table you took it to the courthouse; if not settled there, you took it out to the courthouse lawn.

It was in Bastrop Jim Allen teamed up with the late Richard J. Cullen in the paper industry. It was Allen who rounded up the forest acreage that assured the supply of wood, just as he did for Union Bag and St. Regis in more recent years. There sprang up a firm friendship between Mr. Allen and Mr. Cullen; and Mr. Allen was ever quick to praise the builder of the Southern Kraft Division of International Paper. The early struggle to build the Bastrop mill, according to Jim, was terrific; five times they thought they were closed down. Yet once started, the mill made 2½ million dollars in about two years.

In five efforts to promote paper mills after leaving Mr. Cullen, Jim Allen had the unswerving opposition of his former associate, as well as other contrary interests. Five projects included those at Elizabeth, La., (Calcasieu Paper); Lufkin, Texas, (Southland Paper Mill); Fernandina, Fla., (later Rayonier); Bolton, N. C., (National Paper Co.); and, Savannah, Ga., (Union Bag Co.). When the RFC turned thumbs down on the Fernandina mill project, subsequently built by Rayonier, Mr. Allen pulled the rabbit out of the hat; a contract whereby Union Bag would back a private capital mill at Savannah, Ga. During the struggle to broaden the Southern industry, Mr. Cullen and Mr. Allen remained on good personal terms. The latter received invitations to come back, which he never accepted; nor did Mr. Cullen ever accept Allen's invitations to visit Union Bag, and later, Florida Pulp & Paper Co. Jim Allen was just as well pleased because, as he said modestly—but not quite convincingly: "if he saw my mistakes he'd have thought less of me."

Steady Growth of Appleton

We have editorialized before on Appleton, Wis., one of the great paper mill cities of the world—pointing out its stability, high income, wealth per capita, and good living. Now comes new information showing its growth. It is not only one of the fast-growing cities—but a steadily-growing one, too. Its 1951 population is about 37,000—two wards with 3,000 residents having been annexed since the 1950 count. Its growth 1940-50 was 19% and this is exactly what its average rate of growth has been for the past six decades. If that isn't being steady, what is?

Half Century Runs Off the Dry End

As the first half of the 20th Century "anomalously (ran) off the dry end of the machine at the wet end of the year"—to quote his words—an editor of Paper & Paper Products took a quick glance back at the turn of the Century. The editor, Loring G. Peede, gleaned many interesting facts from Walden's ABC Pocket Guide, 1899-1900 issue, among them:

Of just 147 paper dealers in Manhattan, most of them had offices below Canal St. Paper dealers were listed in only 38 cities—none at all in such cities as Los Angeles, Seattle, or Portland, Ore., and in only four cities in ten Southern States.

American Writing Paper (then Co.) boasted of 28 mills, some as far west as Ohio, Michigan and Wisconsin. Now their mills are concentrated in Holyoke, Mass. Blake, Moffitt & Towne appeared in the list of New York paper dealers.

Mr. Peede noted that in 1900 many prices were leaping upward—chemical pulp rose from \$32 to \$45; paper prices jumped 25% to 100%; publishers decried the paper industry as "an octopus approached by no other in size and fatness."

Little did they dream how much bigger the industry was going to grow—and how they would learn to love it!

In our review of the 50 years now closed—published in our last North American Review Number, we noted that U. S. paper production has multiplied nine times, paperboard 25 times—in that span. New York passed Massachusetts in 1900 as the leading papermaking state and is still the leader. New York led in pulp in 1900, but now Washington state has become the leader by a wide margin.

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		(Save This for Reference)	



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POTLATCH MILL MAKES HISTORY

First Paper from Wood Pulp in 14 States

Forty-four years after it was founded as a logging and lumber firm by the Weyerhaeuser interests of St. Paul, Potlatch Forests, Inc., made the first paper in its history on Dec. 22, 1950—the first paper ever made in heavily-forested Idaho, in fact the first paper ever made from virgin pulp in the whole vast expanse of some 14 Rocky Mountain and Plains States.

Thus a new era began for Idaho and that entire mountain country—the dawning of an integrated forest industry with a solid foundation and a future as long as can be imagined.

History was made that day in the new kraft pulp and paper mill built on the Clearwater, just above Lewiston, Idaho, and a "high-balling" group of veteran Southern kraft industry mill builders under President William P. Davis of Potlatch had kept their word that they would make paper before Christmas.

A PULP & PAPER editor witnessed the last few days of hard-driving work to get "paper over"—and was back there again as this issue went to press to get readers of this magazine an authoritative and exclusive "on-the-spot" illustrated description of the mill. First actual operating pictures of the entire plant, and a detailed first-hand article explaining many of the new and unusual features of this mill will appear in a near-future issue of PULP & PAPER.

First paper was made just 11 months 7 days after the ground was broken. During the following (Christmas) week—the last week of 1950—the Lewiston mill made its first product for shipping. This was pulpboard for Wood Conversion Co., Cloquet, Minn., run over the new open headbox type Rice Barton 216 in. Four-drummer machine which is presently designed for 150 tons a day production.

There is ample space in the 800 ft. long machine room for enlarging capacity of the versatile paper machine which now has 41 paper dryers and two 8-roll calendar stacks. It is designed to make a wide range of kraft paper and board.

This may be only the first unit of Potlatch's new Pulp and Paper Division if extensive wood resources of that company can be brought to the mill at a cost that will allow it to remain competitive. There are "tie-in" provisions already made along the entire length of one side of the new machine room so that another can be added when, and if, the economics justify it or national defense plans may require it.

Although many visitors to Lewiston have been singing the praises of President Davis and his staff for the remarkable speed they showed in building the mill and getting it into production, it is still not a record for that former veteran builder of International Paper Co. mills in the South. He built the first 800-ton unit of the Georgetown, S. C., mill in a breath-taking eight months.

The four-digester pulp mill (each digester, 2750 cu. ft.) had its first test cook Nov. 20, just a little over ten months after



SNAPSHOT SHOWING 800-FT. LONG MACHINE ROOM OF NEW POTLATCH MILL. First actual operating pictures of the new mill will appear with exclusive "on-the-spot" article prepared by PULP & PAPER editor on several visits to Lewiston which will feature one of our near-future issues.

construction began. Several cooks were run between then and the startup day—Dec. 22—and the 5-stage Impco bleach plant and screen room also were given trial runs.

Top officers of Potlatch are Mr. Davis,

president; G. F. Jewett, chairman; E. W. Davis, vice president; F. K. Weyerhaeuser, vice president; H. L. Torsen, secretary-treasurer. Three assistant general managers are E. C. Rettig (logging); O. H. Leuschel (mills), and Roy Huffman (new products). Harry Rooney is purchasing agent.

Top personnel for the Pulp and Paper Division under Mr. Davis are Roland Wilber, manager; Joseph Betts, chief engineer; O. B. Smith, general superintendent; James Pettigrew, electrical engineer; Ollie Duncan, paper mill superintendent—all veterans from the Southern kraft industry—Claude Christiansen, pulp mill superintendent (from Weyerhaeuser); Roland Fortier, chief chemist (from Muskegon, Mich.); Kenneth Ross, power superintendent, and Everett Wallace, electrical superintendent.

GEORGE SCHNEIDER, vice president in charge of research, Celanese Corp. of America, New York, visited the fast-rising new alpha pulp mill of Columbia Cellulose Co., subsidiary of Celanese, at Watson Island, B. C., recently.

PLEASANT SURPRISE!



PULP & PAPER did NOT takes this picture.

On our word of honor, PULP & PAPER didn't even know about it until we saw it published in the house organ of one of the biggest pulp and paper companies in the world.

It was published in a recent issue of the Union Bag Digest of Union Bag & Paper Corp., Savannah, Ga.

We are mighty pleased that a copy of PULP & PAPER was handy—apparently being READ at the mill down in Georgia—when this picture was taken.

These gentlemen are pulpwood shippers.

Major Templeton (left) and Donald Williams (right), are partners in the firm of Williams & Templeton, of Swainsboro, Ga.

WISCONSIN W. L. PLANS

4 MILLS TO BURN CALCIUM BASE LIQUOR

When the Wisconsin Committee on Water Pollution focussed its spotlight upon the Wisconsin River in a recent two-day hearing at Wausau, Wis., it brought forth an amazing diversity of new and improved equipment and which are helping—or may help—to abate the flow of pulp and paper mill wastes into the rivers which are the life blood of this industry.

The equipment and processes discussed are of intense interest to many other mills facing similar problems and so, in this article, *PULP & PAPER* has culled the long hours of testimony for these essentials. Our readers do not need to be told of the economic pitfalls or the enormity of the problem, but we should first hit the high points of a strong general defense made for the industry at Wausau.

President Folke Becker of Rhinelander, President Stanton Mead of Consolidated, Vice President Allen Abrams of Marathon, Vice President C. G. McLaren of National Container of Wisconsin, and others prepared and presented some of the most effective and intelligent statements ever made by spokesmen for this industry before a public body. An unbiased newspaper account of the hearing reported the fact that two Isaac Walton League lawyers attacked testimony of a long parade of spokesmen for all the five sulfite mills, three kraft mills and other groundwood and paper mills on the Wisconsin—each one of which was granted a hearing. But in the end, the attackers were forced by R. S. Brazeau, of Wisconsin Rapids, attorney for the mills, to admit they themselves knew nothing factual about conditions in the Wisconsin River.

Sixteen labor union witnesses emphasized they did not want the industry's growth and economic health threatened for a few miles more of fishing. Some of the other general highlights before we go into the engineering and new equipment phases of this hearing and also the deadline developments across the state on the Fox River (which brought news of definite plans to install four new mill-scale evaporation and burning plants in Wisconsin, each costing from nearly a million to a million and one-half dollars):

Yeast Sales Fall Off

Mr. Becker: "As vice president of the Sulphite Pulp Mfgs. Research League, I go on record that the League and its members are earnestly and sincerely doing their best to solve the problem of sulphite liquor pollution. There are no ifs or buts about it. We are doing *everything* we know—and we believe we know as much as anyone knows in this as yet incompletely mapped field. . . . We investigated considerably more than 100 different approaches. Some looked good until final results proved otherwise. . . . two methods are currently regarded by the League as offering reasonable hope by means that might be generally applicable to Wisconsin mills. . . . the yeast process and evaporating and burning as applied to either calcium or ammonia base pulping. . . ."

He revealed the Rhinelander yeast sales suffered a sharp falling-off; the mill had 5 months production (over one million pounds of yeast) in storage in December, and a good yeast profit is necessary to meet the \$200,000 a year cost of the plant. He revealed Rhinelander is installing an evaporating and burning plant for the



VICE PRES. ABRAMS of Marathon, at Wausau hearing: "Would you destroy the axe because it cut down forests? The gun and rod because they kill deer and catch fish? Stream pollution is direct consequence of people and their activities. When people come to Wisconsin to earn their livelihood, pollution came, too."

other 50 tons of its production, but warned the best this process offers is "a break-even operation"; on the other hand, as much as \$10 per ton of pulp operating loss is possible.

Abrams: Pollution is Here to Stay

Mr. Abrams: "True conservation as defined by that great leader of American conservationists, Gifford Pinchot, consists in using our natural resources to provide the greatest good for the largest number of people and for the longest time. . . . In 1911 when the last paper mill was built (on the Wisconsin), the waste from industry had relatively little effect on the river. As cities grew and mills expanded, pollution became a problem. . . . However much hard work and honest effort may be devoted to reduction of pollution, it will remain a problem in those portions of Wisconsin intensively used for living and working. . . . not every stream can be held back from other use to serve solely or principally for recreation."

He said on the Wisconsin—probably the hardest working river (power) for its size in America except possibly the Connecticut—the pulp and paper mills alone (10 companies) with a \$34,000,000 payroll, support 171,000 people and 2,500 retail stores with \$170,000,000 annual sales, farm markets of \$51,000,000, and many other dependents.



FOLKE BECKER (left) and MILAN BOEX (right), Presidents of two of four companies—Rhinelander and Northern—which announced plans they will install plants to burn calcium base sulfite spent liquor for fuel. The others are Consolidated and Hoberg Mills. Rhinelander has ordered a General American evaporator—Northern will order GATX equipment too, with Pollution Committee's approval.

The Case for Kraft Mills

Mr. McLaren, speaking for kraft mills, stressed their development of the jackpine forests of the state—one of the outstanding forestry management accomplishments in the nation. He stressed the danger of drastic orders hurting these mills which already face average wood cost of \$45 a ton of pulp, compared to \$19 a ton which he said was the average competing Southern mill's wood cost. He said average kraft pulp manufacturing cost is \$34 to \$35 in the South and \$65 to \$70 on the Wisconsin. He said most Southern pine yields are 1,250 tons of pulp per cord as compared with only 950 lbs. per cord for Wisconsin jackpine.

Willis M. Van Horn, Institute of Paper Chemistry, stressed that "there is not a toxicity problem associated with operations of kraft mills on the Wisconsin."

Mead: People Too Intelligent

Mr. Stanton Mead, in one of the most effective statements, said:

"I am confident the people of this state are too intelligent to handle by sheer discipline a problem which only science can solve."

While announcing that his company's sulfite mill at Appleton also plans—like Rhinelander, Northern and Hoberg mills—to put in an evaporating and burning system, he warned nevertheless that expending experiments to full mill scale plants "can be dangerous to the entire cause of stream conservation. . . . any mistake on this scale will be serious and damaging. . . . leave lasting scars."

Across the state, on Dec. 31, the deadline was reached for Fox River mills to submit their plans for pollution abatement to the State Committee. They were given one more year—to Dec. 31, 1951 to complete the job. Northern Paper Mills

said it would appeal to the U.S. government to permit use of stainless and other critical materials, despite the war, for these SWL projects. All mills, even for repairs and maintenance, were having greatest difficulty in January getting stainless or alloys or other critical materials—even structural steel. Well-informed sources thought in this war, however, the government might approve some SWL innovations for reasons of efficiency, conservation, or for by-products like alcohol, and the mills will get much-desired DO ratings for these materials.

Fox River Plans

Northern Paper Mills in Green Bay and Consolidated Water Power & Paper Co. in Appleton announced that (with the committee's approval) they would install commercial plant-size waste calcium base sulfite liquor evaporating and burning equipment. Hoberg, at Green Bay, tossed out drawings for a yeast plant when that market collapsed and announced it would build a \$1,250,000 CAO evaporating and burning plant. Kimberly-Clark at Kimberly had satisfied the committee by cutting its sulfite production 40%. The Fox River's only kraft mill, Thilmany, and several groundwood, semi-chem and paper mills had already submitted various plans for savealls and other less expensive improvements, mainly to reclaim fibers.

Major announcements of projects or accomplishments follow:

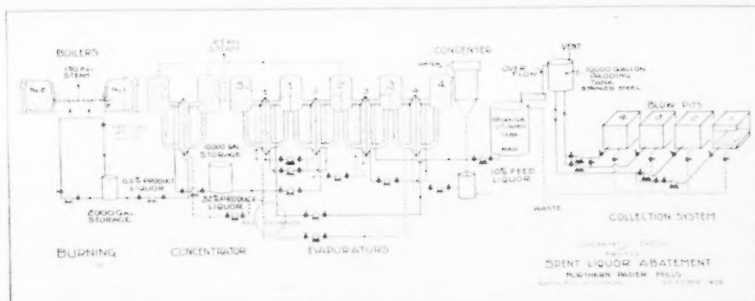
Rhinelanders' Program

Rhineland Paper Co., farthest north on the river, has ordered a three-effect General American Conkey flat plate heating surface evaporator using the Rosenblad channel switching system, thereby designed to prevent excessive lime scaling, the bugaboo in evaporation of calcium base liquor. (See Curt Rosenblad's complete description of the system and commercial installations in Sweden, *PULP & PAPER*, Sept. 1950, page 63; and description of Appleton pilot plant, *PULP & PAPER*, March 1950, page 36.)

Rhineland, which recently took over sole ownership of the Sulfite Research League's Lake States torula yeast plant at Rhineland, also revealed that it has ordered atmospheric drum dryers from Buffalo Vac. Div. of Blaw Knox Co. of Pittsburgh and other supplementary equipment, and is committed to a total outlay of \$350,000 in 1950 for waste liquor treatment. (The drum dryers could dry the liquor to a flaky substance if desired.)

"We are proceeding with an evaporation and burning installation which will supplement the existing yeast plant and thus give us facilities for taking care of our entire sulfite liquor production (about 100 tons daily—yeast plant uses liquor from 50 tons)," Jesse M. Holderby, manager of Rhineland's new By-Products Division, told *PULP & PAPER*.

The evaporating and burning installation which will be of a size to serve roughly 50 pulp tons is expected to cost about \$250,000," he said. "No boiler expansion is required. Barring delays caused by military demands, this should be in operation by about July 1, 1951. The set-up will be made to evaporate not only



NORTHERN PAPER MILLS, GREEN BAY, WIS.—FLOW CHART OF SWL COLLECTION, EVAPORATION AND BURNING PLANT. Spent liquor of 10% concentration is collected from floor of 4 blow pits on right; pumped to padding tank; screened into storage tank; pumped through four multiple effect General American Conkey type Rosenblad switch system evaporators; then 52% liquor is pumped through concentrator, resulting in 65% liquor; atomized and burned under existing boiler. Northern abandoned experiment with pilot plant furnace recently publicized in various publications, *PULP & PAPER* learned, after engineering Dept. decided it was impossible to use.

raw liquor, but yeast plant effluent as well."

Northern's \$1,500,000 Project

Meanwhile, in Green Bay, Northern Paper Mills announced plans for \$1,500,000 in installations, including another General American Conkey flat plate Rosenblad switch system evaporator, this one to be a five vapor body quadruple effect unit. Liquor of 60-65% solid content will be burned in an existing boiler equipped with atomizing burners. An existing 3-story 40 x 140 ft. brick building must have its roof raised 14 ft. to accommodate the evaporator. Northern also has ordered an American Blower collectors (\$150,000) to collect the extremely fine fly ash powder that escapes from burning calcium base liquor. American Blower Co. engineers and Sargent & Lundy, Chicago engineers, have participated with city engineers in the dust experiments. The 4-digester, 130 ton a day Northern sulfite mill expects to reduce its river pollutional effects by 40-45%, said Milan Boex, president and general manager.

Plans at Northern call for padding blow pits with liquor from a previous cook, instead of padding with water as now before a blow. This will decrease the dilution of incoming spent liquor and it will average 10% solids. Each pit will be equipped to pump liquor to a 10,000 gal. stainless steel padding tank through screens, then to a 100,000 gal. wooden storage tank. This is sufficient for 5 digester blows or 12 hrs. collection. This will pass to the General American evaporator and be evaporated to 52% concentration. It then passes through a 2-vapor body of reversing type for reduction to 60-65% solids; then to the boiler. A total of 101,000 lbs. of 10% liquor would be evaporated hourly to 19,400 lbs. of heavy liquor and stored at 200 degrees F. in a supply tank adjacent to the boiler. N. L. Malcove, technical superintendent, and H. W. Gochauer, chief engineer, joined Mr. Boex in presenting the plan.

Consolidated's Plans

At Wausau, President Stanton Mead of Consolidated announced construction of a \$70,000 spent liquor collection and storage system at Consolidated's Appleton sulfite mill and now his company expects to order evaporators, prepare a site and

a building for them, and reconstruct combustion chambers of two existing boilers and equip them with liquor-burning jets. If this Appleton evaporating and burning plant on a mill-size scale is successful, President Mead predicted his company would build a similar plant at its larger sulfite mill on the Wisconsin, at Wisconsin Rapids (180 tons). At Appleton (140 tons), he said: "To use the expected volume of liquor will require running the two boilers practically continuously. There will be times when we can't use the steam from the boilers without shutting down our bark burning boilers. We can't throw the bark in the river, either, so that becomes a problem."

As a test at Appleton, one boiler ran continuously 20 hours on spent sulfite liquor, exhausting the storage system. "We have pretty good knowledge on how to spray it in, how hot it has to be, how much steam is required to atomize it, how many jets to use and where to put them, how much forced draft is necessary, how hot the air must be, how stable the combustion is, what the limits of variation are, how to prevent the settling out of only partially burned solids, what to expect as to sagging and scaling of boiler tubes, and how much it is worth as fuel," said Stanton Mead. (Babcock & Wilcox and Consolidated engineers cooperated in successful burning of calcium base liquor at the Appleton mill without the aid of auxiliary fuel—complete description in *PULP & PAPER* Jan. 1951, page 66.)

Nekoosa-Edwards' Program

Vice President Neil Nash of Nekoosa-Edwards Paper Co. said their sulfite mill also will install an evaporator and burning plant, if and when the process proves "practical" on mill scale.

In November Wausau Paper Mills Co. of Brokaw, Wis., became the first mill on the continent, aside from two on the West Coast and two in Maine, to shift over to ammonium base sulfite pulping instead of calcium base for experimental mill scale trials. Nekoosa-Edwards announced it had begun an investigation of the possibilities of ammonia base pulping and that first laboratory tests indicated it might have advantages over calcium for "a more practical cycle of pulping, liquor collection at highest solids content, evapo-

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ration and burning." (Statement by Dr. Truman A. Pascoe, technical director.)

Brokaw Ammonia Project

At Brokaw, as in the Crown Zellerbach-Soundview project at Lebanon, Ore., mill scale ammonia trials will continue, aiming toward recovery and heat values and ammonia liquor from Brokaw was concentrated at the Research League's Rosenblad evaporation pilot plant at Consolidated's Appleton mill, and burned in the Consolidated mill's Babcock & Wilcox furnace. Technicians and engineers from 14 Midwest sulfite mills witnessed this burning test at Appleton Dec. 22. They learned ammonium liquor can be burned for fuel, odor is not likely to be a problem, fly-ash is apparently less difficult than fly ash from calcium liquor but boiler efficiency was considerably lower than rated capacity. Evaporator surfaces unexpectedly fouled with carbon because of greater viscosity of the ammonium liquor and further burning of liquor from Brokaw was postponed until this problem could be licked.

David E. Smith, president of the Brokaw company, told the Wausau hearing that ammonia handling equipment alone has cost \$20,000 but special digester linings will undoubtedly have to be installed at cost of \$35,000-\$40,000.

New Screens are Developed

He revealed that Robbins Conveyor Inc. has developed a elliptical dewaterizer type of screen of stainless steel with a new type of plate, new in this industry, for screening of waste sulfite liquor. Also an improvement he cited is an inclined screen with additional baffles, showers and dams added to permit screening of all waste liquor.

He said Wausau Paper Mills has started a new bleach plant in the past year with three vacuum-type dewaterizers and washers with counterflow water system to reduce fiber loss. A new Jeffrey Mfg. Co. hammermill was purchased to permit disposing of all bark by burning. For recovery of unscreened rejects, a chip shredder was installed.

A new Bird screen with high pressure low volume showers and recently installed new type wire showers developed by Emerson Mfg. Co., in all paper machines, he said, have reduced losses from the paper mill. Rebuilding of Bird savealls and rearrangement of Dirtees and Vor-traps, he said, reduced waste. A new pumping arrangement will permit use of paper mill white water for dilution of bleached stock.

Nekoosa-Edwards sulfite mill plans to install new coarse screen equipment in the Port Edward mill wood room to salvage wood bits and bark. An experiment involves collecting waste sulfite solids by careful displacement with water of maximum amount of total digester strength liquor with a minimum of dilution. This might permit use of present equipment instead of expensive stainless steel multi-stage washers for collection. Nekoosa-Edwards and Combustion Engineering last year conducted the Sulfite League's first burning trials with sulfite liquor, in this case using pulverized coal for half the steam production (full, illustrated report

in PULP & PAPER, Oct. 1950).

Marathon Will Carry On

Marathon Corp., said Mr. Abrams, vice president and research director, lost money every year for the first 18 years (until 1945) in its Chemical Division, which makes vanillin and plastic materials from waste sulfite in a \$1,400,000 plant at Rothschild. It spent \$1,800,000 more in research of its own, aside from state and national industry contributions. But Marathon will nevertheless spend \$300,000 in the next two years to increase capacity of its Chemical Division and further reduce pollution, and research is continuing to the tune of \$100,000 a year, he said. New equipment also has been ordered to cut down fiber loss in the paper mill at Rothschild.

The three kraft mills on the Wisconsin told of many improvements they have made or are making.

Installations at Nekoosa

For the Nekoosa mill of Nekoosa-Edwards, R. A. Nugent, manufacturing superintendent, said a \$200,000 continuous Dorr causticizing and settling system would go into operation in 1951 using condensate water from vacuum evaporators and this would eliminate loss of mercaptans to the river. A one-body addition to the vacuum evaporator ordered in November, costing \$49,000 installed, will decrease chemical loss from brown stock washing. Vacuum evaporation may again be expanded in 1951 by equipment costing \$60,000, he said. Also a 1951 project calls for \$76,000 outlay for wood room fiber recovery, improved evaporator operation and sanitary sewage. A vibratory screen for the wood room will re-screen wood refuse. Even a \$140,000 Cottrell Precipitator, usually regarded as decreasing air pollution, also served by its efficient dry powder reclaiming to cut possible sewer losses by wet process.

Since 1940 other expenses totaling \$569,300 for brown stock washing (\$460,000), white water pumps, bleach plant vacuum washing and new evaporator bodies were credited by him with reducing pollution.

What Mosinee is Doing

For Mosinee Paper Mills, Norman S. Stone, vice president and manager, said an Oliver United continuous multistage vacuum washing system installed in 1947 at cost of \$500,000 accounted for a big reduction in B. O. D. Now the mill is planning a system to use paper mill white water exclusively for makeup water for the Oliver washers. A new \$50,000 digester blowdown condenser installed in 1949, he said, reduced concentration of potentially toxic materials in condenser sewer and also volume rate of discharge to river. Rebuilding of Mosinee's wood room in 1951 will include use of dilute final washings from the vacuum washers for a hot pond for pulpwood, also cutting down B. O. D. to the river. For labor alone, over \$7,000 is spent in sampling, testing and inspecting for leaks to reduce losses.

Tomahawk and Merrill Mills

For the National Container Corp. mill at Bradley, near Tomahawk, vice president McLaren mentioned automatic in-

struments installed to signal losses—a machine white water overflow signal, an indicating recorder of contamination of evaporation room effluents, and numerous liquid level records to forestall spills. An extensive white water system at this mill includes savealls. He also mentioned a permanent setup for ponding lime mud and studies to determine means of using ponding areas to keep semichemical wastes from the stream during low water and studies of methods to reuse them.

The Tomahawk Pulp Co., through its manager, C. J. Bronsted, reported installation of a refiner which regrinds the rejected wood waste from the round screens in its small groundwood pulp mill. This new refiner has cut fiber losses to the stream from over 2% to about 0.5%. The refiner was made by Ed Arpin, of Neenah, Wis.

For the Ward Paper Co. at Merrill, R. A. Diehm, executive vice president, reported new Robbins Conveyor screens cut fiber loss from 2.74% a year ago to 1.62%. A new Sveen-Pedersen saveall, for delivery April 1, guaranteed to reduce fiber losses to 1/2 lb. per 1,000 gals., or to 0.5%. Changes in de-inking and bleach plants, he said, would reduce pollution.

Whiting-Plover Paper Co., south of Stevens Point, a paper mill whose effluent has no significant effect on pollution, reported through its manager, A. J. Schierl, it would install sanitary sewage systems as several other mills were also undertaking to remedy situations since they were built.

McCarthy Moves to N. Y. — Promoted in St. Regis Co.

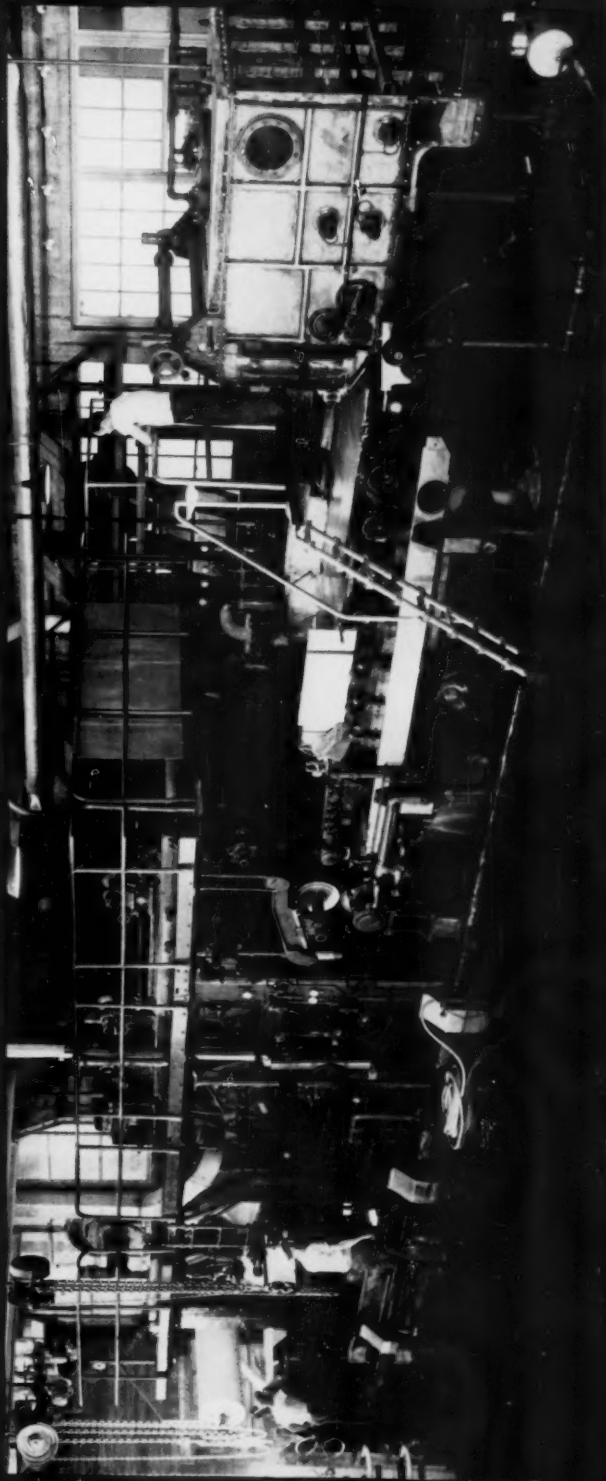


Justin H. McCarthy (in picture), widely known as builder of some of most modern and largest installations of the Pacific Coast industry, has been transferred from Tacoma, Wash., division of St. Regis Paper Co., where he was chief engineer, to New York City headquarters and

his responsibilities in engineering in the company have been broadened. He will take an important role in engineering for the two new paper machine additions planned by St. Regis in Florida, an addition to its present plants at Pensacola and the entirely new mill at Eastport, near Jacksonville.

He built the modern new paper mill started up in Jan., 1949, at Tacoma and large hydraulic log barking plants—first of their kind in the industry—in Tacoma and for Soundview Pulp Co. in Everett, Wash. He is a graduate of Dartmouth College and was with Hardy S. Ferguson engineering firm on many mill projects for 17 years.

GEORGE E. GILLESPIE has been made assistant manager of The Celotex Philadelphia branch. He was a sales representative in the same branch.



Tribute to Pacific Coast Paper Mills

CONGRATULATIONS to Pacific Coast Paper Mills upon the completion of the latest phase in their expansion program. We are proud of the fact that the Pacific Coast Paper Mills and the associated Westminister Paper

Company have entrusted Beloit Iron Works with important steps in their development since the first machine at New Westminster, British Columbia, Canada, was built in 1922.—*Beloit Iron Works, Beloit, Wisconsin.*

NEW MILL IN WEST

NO. 3 MACHINE FOR BELLINGHAM



NEW REINFORCED CONCRETE PAPER MILL of Pacific Coast Paper Mills of Washington, two stories high, with 3 in. tongue-and-groove cedar roof. Constructed by Howard S. Wright Inc. of Seattle, general contractors, it completely dominates over the old mill adjoining it at left. The office is in building at extreme left.

connected by covered walkway. In background at right is Puget Sound Pulp & Timber Co., which supplies part of sulfite pulp supply to the tissue mill, delivered only 500 ft. by Ford truck. Telephone poles alongside mill have been removed since this picture was taken. New machine is on second floor with ample space alongside for jumbo roll storage.

From near and far, papermakers and engineers are dropping in at Pacific Coast Paper Mills of Washington, in Bellingham, Wash., to see its modern and commodious new tissue mill. Many of the newest features for tissue or for paper manufacture, in general—some of the features being "firsts" on the Pacific Coast—have made this new addition a prime attraction.

The \$800,000 expansion has made this a three-machine mill, all three being 85-inch Fourdriniers of varying speeds. The new Yankee Fourdrinier attained its maximum speed of 1,500 ft. per minute just 60 days after its smooth and entirely successful startup on Sept. 2, and as a result the tissue production of the entire mill has been boosted from 35 to 60 tons.

Just two years ago, No. 2 machine was entirely rebuilt, being converted from cylinder to Fourdrinier, and a new Valley headbox and larger Yankee dryer were installed. Now both No. 2 and No. 3 are 100% producers of this company's quality brand MD facial type toilet tissue. All three machines trim 78 inches.

Here are their capacities for tissue production:

Machine	Max. Speed	Tons per Day
No. 1	950 f.p.m.	15
No. 2	1150 f.p.m.	20
No. 3	1500 f.p.m.	25

Ever since No. 3 started up, all three have been operating 24 hours a day, seven days a week, supplying this mill's tissue markets in nine Western states and Hawaii, the Philippines and Alaska.

At the affiliated Westminster Paper Co., across the border in New Westminster, B.C., a second tissue machine was installed four years ago, doubling Westminster's output to 75 tons of toilet tissue, waxing and specialties and a groundwood mill was added at Westminster two years ago.

Bellingham's No. 3 machine is housed in a new reinforced concrete mill building. It is designed with one false wall, and with wiring all in place, so that a No. 4 machine can be added when desired with a minimum of difficulty.



J. J. "Jake" HERB (left), Chairman of Board of Pacific Coast Paper Mills of Washington and also of Westminster Paper Co., was Supt. half century ago at Thilmany in Wisconsin and he is builder of tissue mills in Merriton, Ont., New Westminster, B. C., and Bellingham.

F. J. "Bill" HERB (right), his son, is President of Pacific Coast Paper Mills of Washington in Bellingham, and Vice Pres. of Westminster Paper Co. Born in Appleton, Wis., in 1908, he attended Gonzaga U., graduated from Univ. of Washington in 1930.

"We are working on plans for a new finishing and converting plant," said F. J. "Bill" Herb, president of the Pacific Coast Paper Mills. "We hope to get started this year on it and it will be at the north end of the new mill, close to the dry end of the new machine."

Construction

Howard S. Wright Co. of Seattle was general contractor and builder of the new Bellingham mill addition. This company also installed all machinery, cooperating with Beloit Iron Works engineers. Beloit built the new machine. Howard Buckwalter was resident engineer in charge for Beloit.

The two-story concrete building has, along almost the full length of the roof

apex, a separate roofed section with window full length for ventilation. The machine, of course, is on the second floor, and here an interesting feature is an 80 ft. by 160 ft. open span, allowing plenty of room alongside the machine for jumbo roll storage.

The mill is just 500 ft. from the finishing and storage end of Puget Sound Pulp & Timber Co. and fork trucks bring sulfite pulp from that mill, brought to the operating floor on a large elevator. Sulfite pulp is also purchased from Weyerhaeuser, Soundview and Rayonier mills. No. 1 machine uses unbleached sulfite for furnish; No. 2 and 3, bleached sulfite. These are mixed with a small percentage of groundwood from the New Westminster mill.

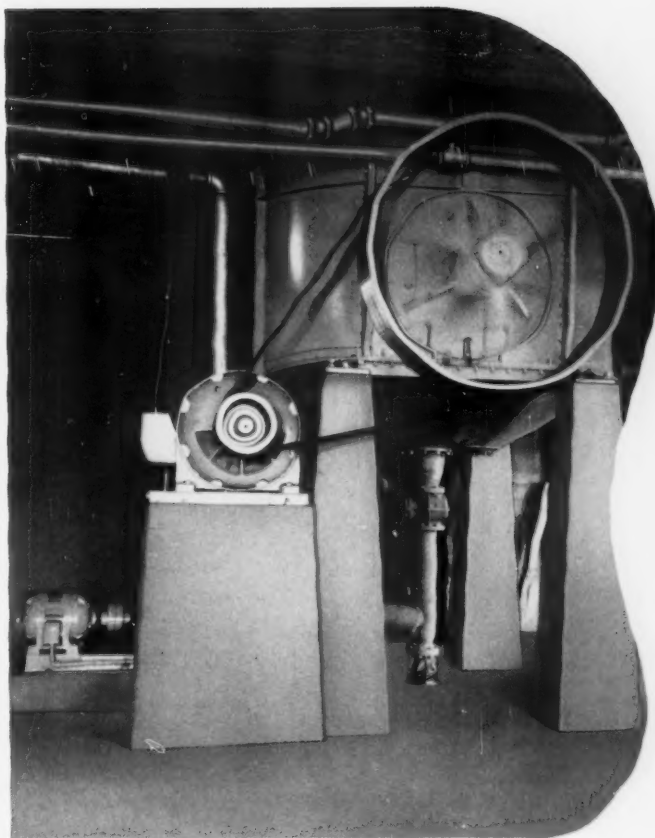
Pulp Preparation

The first E. D. Jones & Sons Pulpmaster to be used in a paper mill in the Far West is the first installation at the wet end in the new plant. The feed end of the Pulpmaster is on the second floor; the operation and drives are all below. The simplicity of its operation is one of the main features of this new machine, which defibers and hydrates pulp with a horizontal rotor mechanical arrangement, instead of the more commonly known vertical rotor arrangement. It handles 1,500 lbs. of stock at one time in the Bellingham installation, say the mill operators. They say it gets vigorous agitation at a modest speed and maintenance cost is low.

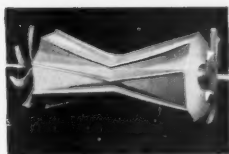
It is driven by a General Electric 125 hp, 900 r.p.m. motor, and handles stock at about 6% consistency. Refining discs or wearing bed plates are mounted on a combination bearing holder and packing box and protrude very little from the inside of the tank. Their position is adjustable by means of large bushings and studs. The discs have radial bars against which stock is rubbed by the impellers on the rotor, accomplishing an unusual amount of fiber separation.

Pulp-Master installed at the Bellingham Mill of the Pacific Coast Paper Mills. The feed end of the Pulp-Master is on the second floor; operation and drives on the floor below.

THE FIRST* PULP- MASTER



ON THE PACIFIC COAST



PULP-MASTER Rotor. Its powerful vanes quickly break up charge; rubbing action of impellers over refining discs completes defiberization.

Chosen for its simplicity of operation, vigorous agitation and low maintenance cost, this PULP-MASTER handles charges of 1500 lbs. of stock at about 6% consistency in the modern plant of Pacific Coast Paper Mills in Bellingham.

Practically no manual labor is required for operation; the PULP-MASTER takes an entire charge of baled pulp (or wastepaper, broke or other materials), completely defiberizes in 10 to 40 minutes. Efficient use of power and economy of floor space are additional features of the machine.

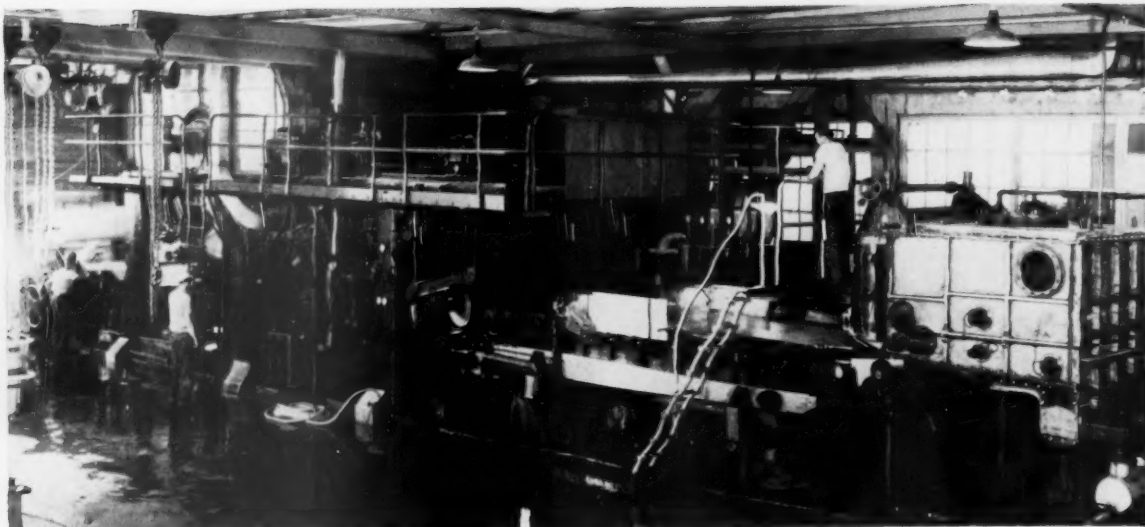
The PULP-MASTER is available in several styles and sizes, for either batch or continuous operation. Ask your Jones representative or write for our Bulletin EDJ-1019B.

*Several more are on order for other west coast mills.

E. D. Jones

E. D. Jones & Sons Company, Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY



NEW BELOIT No. 3 MACHINE at Pacific Coast Paper Mills of Washington, 85 in. width, 1,500 f. p.m., is 100% on production of MD facial type toilet tissue. Note new Beloit Air-Cushioned Control Flow Headbox at right—first complete one in-

stalled in Far West. Yankee dryer roll is 12 ft. in diameter and above it is Drew Engineering hot air system. The new machine weighs 250 tons and is 72 ft. long.

Next is a Shartle Brothers Miami No. 2 type Jordan with GE drive and this is followed by a DeZurik Shower Co. consistency controller. All stock valves and white water valves throughout the new mill were by DeZurik.

Next installation ahead of the machine on the operating floor is a Shartle Bros. Selectifier with its own control panel. The Selectifier is a type of screen which removes metal, wood bits, rag or other foreign matter from stock which might damage machine clothing.

First Headbox of Kind in West

Next is another "first" for the Far West—the first entirely new Beloit Air-Cushioned Control Flow Headbox. Other mills on the Coast have adopted this Beloit

type of headbox by putting caps on higher boxes, but this is the first entirely new low headbox of this type in the West. It uses air pressure in a low box, thus offsetting the crosscurrents and turbulence that are common in the older type of high headboxes, which were thought to be necessary for supplying stock to high speed machines. Now speed is attained with a low box and air pressure. A group of five rectifier rolls are in this Beloit headbox which break up the crosscurrents. It is a stainless steel box, only about 4 ft. high.

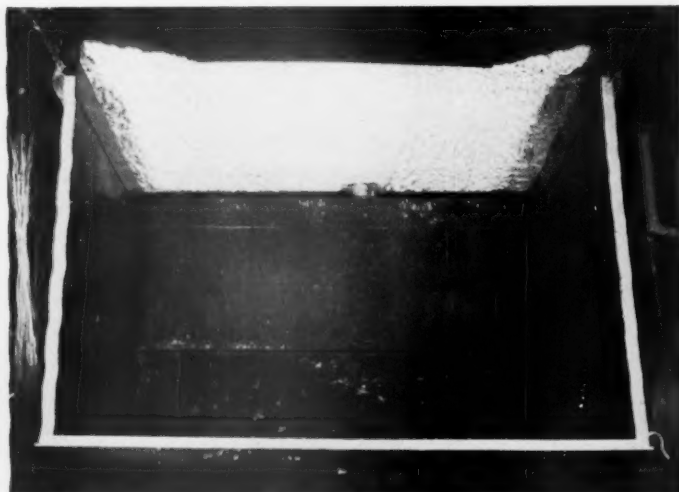
Machine Description

Bingham Pump Co. of Portland, Ore., supplied the 12 x 10 ft. fan pump for this machine. It has a 5,000 gal. capacity.

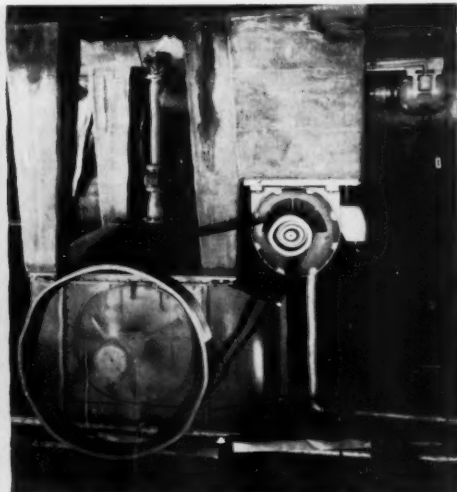
Bingham supplied four stock pumps for the No. 3 machine as well as a new 3,000 gallon fan pump for No. 1. Bingham supplied vertical saveall pumps for all three machines and other vertical pumps for stock. On No. 3 machine, Shartle supplied a Jordan pump and another pump.

The Fourdrinier for No. 3 is all-stainless steel, cantilever type, 85 inches wide and 50 ft. long. As in the case of other tissue machine Fourdrinier sections made since the war, it does not have to be removed for wire change, but is simply disconnected and lifted with jacks, so the wire slips over it like a sock. The machine is equipped with a Gilbert and Nash wire guide.

The press section consists of a suction press, plain pressure roll and a set of



HERE IS NEW E. D. JONES & SONS Pulpmaster at Bellingham tissue mill—first installed in Far West. It defibers and dehydrates pulp in preparation for machine. At left is Pulpmaster and its 125 hp. General Electric motor, providing very simple



type of drive. At right is feed end of the Pulpmaster. This pulp is about 6% consistency. This feed end is on operating floor directly above the equipment shown at left, all of which is on lower floor.

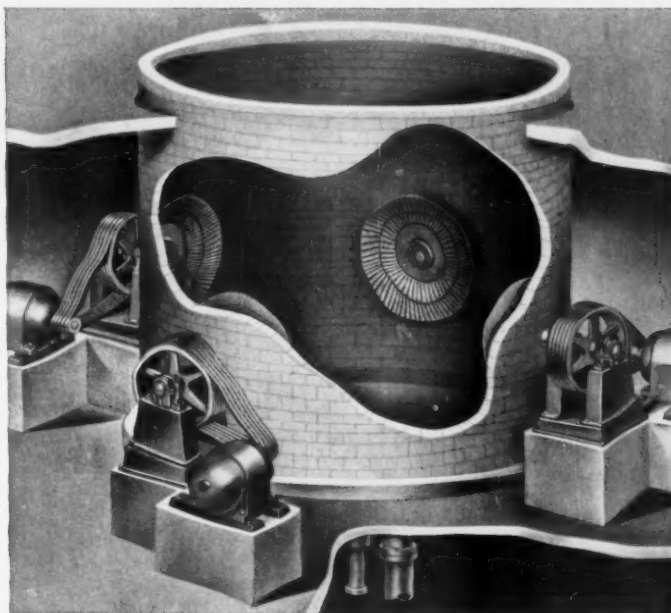
The Rice Barton

QuatroPulper

... a high production machine ... ideal for
disintegrating pulp, broke or waste paper

Other DynoMachines:

- The **QuatroPulper** is designed for processing stock in large capacities ... either batch or continuous operation.
- The **DynoChest** is primarily for disintegrating stock in slush form ... batch operation.
- The **DynoFiner** is for performing the same operation on a continuous basis.



THE stock is charged all at one time into the top of the vat. Four DynoPellers (described below) subject it to the vigorous dynomizing action that completely separates each fibre from its neighbor, maintaining its original length. The simple operating principle and

design of the QuatroPulper eliminates the "wracking" and grief of other types of pulpers. Because there are few moving parts there is no loss of production time due to repair or adjustment. The QuatroPulper defibers the stock at low cost and produces a high quality slurry quickly and effectively.

Let us tell you how the QuatroPulper can save YOU money in processing YOUR particular stock. Write today.

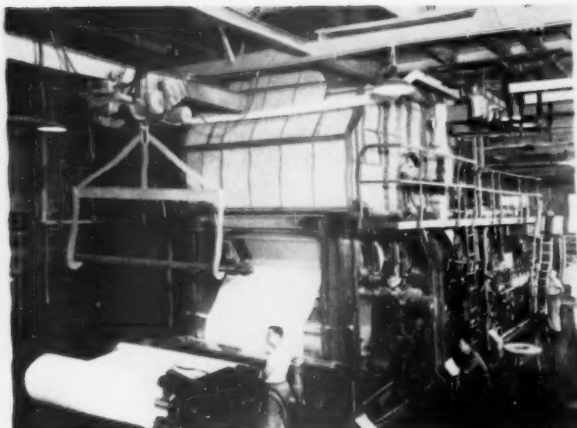
The DynoPeller.....→

is the heart of all DynoMachines. Its concave face is lined with rough, hard carbide particles. As the DynoPeller rotates it causes a suction at its center that pulls the stock towards it. Centrifugal force then causes the stock to flow rapidly over the rough carbide particles. This effective dynomizing action completely disintegrates the stock ... separating each fibre from its neighbor while maintaining its original length.

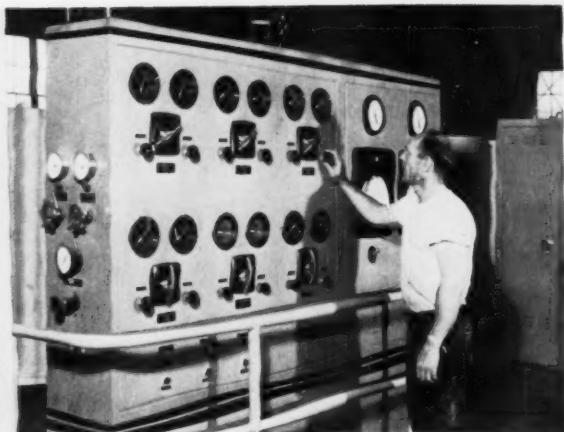


RBR#





DRY END of new Beloit tissue machine, 85 in. wire, at Pacific Coast Paper Mills of Washington. Shows 24 ft. Yankee with Drew Engineering vapor system above. Two-roll calendar stack and Beloit reel are shown. SKF roller bearings are used; also Hannifin air cylinders are noted at various points. Lodging doctors are on calendar rolls. Yale crane at upper left.



FOXBORO CONTROL BOARD near dry end of new machine. Operator is adjusting pressure roll loading. Other switches near his hand are for loading of wringer and press roll, and for cleaning, creping and skinning doctors. On side of panel, at left, are controls for steam supply pressure and for Yankee dryer pressure. GE board for drive controls is just back of him.

wringer rolls. Plain press rolls and press felt rolls were covered by Griffith Rubber Mills and by Huntington Rubber Company. All press nips are loaded by Beloit diaphragm units.

The Yankee dryer is of high tensile strength cast iron, 12 ft. diameter, 94 inch face, and is designed for operating steam pressures up to 125 lbs. per square inch. It is equipped with Beloit doctors.

A two-roll calendar stack follows and then the Beloit reel, both equipped with Hannifin air cylinders. There are Lodging doctors on the calendar stack. There are 12 Hannifin air cylinders used at various points on the machine. Allis-Chalmers vari-drives are used on main line shaft and between calendars and reel.

S. K. F. roller bearings are used at various positions all through the machine and were specified particularly by the

Speed-In the Old Days

J. J. Herb, chairman of the Westminster and Pacific Coast Paper Mills which he founded, told PULP & PAPER that when he was superintendent at Thilmany Pulp & Paper Co., Kaukauna, Wis., nearly half a century ago, he was able "to screw up the speed of one of the machines from 150 to 200 feet."

"I was warned it might shake to pieces if I didn't stop it," he added. "It didn't."

That became standard speed for several years in paper mills—a far cry from his Bellingham mill's new No. 3, running 1,500 f.p.m., and capable of making 5,000 miles of toilet tissue every 24 hours.

company for the main line shaft, because the universal and flexible character of the S.K.F. bearings were desired.

Auxiliary Equipment

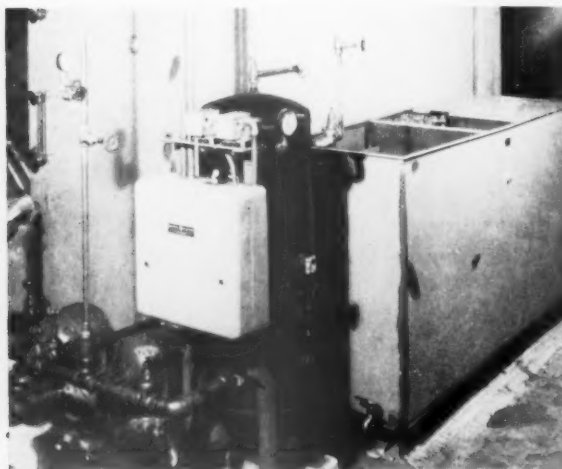
Drew Engineering Co. of Portland, Ore. supplied the hot air absorption and control system on the Yankee dryer roll.

Three Nash Engineering vacuum pumps are located in the basement. These are H-8, K-5 and L-3 types, all driven by GE motors, the first by 75 hp., others by less.

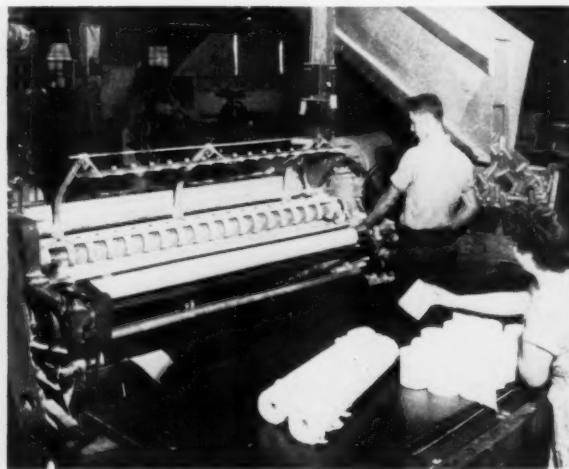
All stock and white water lines are of stainless steel.

A complete control panel for pressures and loading and an electric drive control board are strategically located alongside the dry end of the machine and only a few feet apart. These controls, engineered by Beloit, are fitted by Foxboro and regulate wringer roll loading, press roll loading, pressure roll loading, cleaning doctor loading, creping doctor loading, skinning doctor loading and steam supply pressure and Yankee dryer pressure.

The General Electric drive for the machine consists of a 250 hp. DC variable speed single motor with 300 hp. generator



PUMPS, PRESSURE TANK and controls for paper machine automatic hermetically sealed oiling system supplied by William W. Nugent Co. of Chicago.



ONE OF FOUR NEW TOILET REWINDERS going into the Bellingham mill to handle expanded production. Supplied by Paper Converting of Green Bay, Wis.

"BLU-NYLEDG"

(NYLON EDGE)*

BRANDON DRYER FELTS

score another "first"

Oil soaked and greasy edges ruin many felts long before their time. Our "BLU-NYLEDG" NYLON Reinforcement, with its tremendous extra abrasive protection, (more than 100 times that of cotton) *saves edges from cracking* and keeps your felts running long after the ordinary felt would be gone.

All selvage warp yarns of pure, solid filament NYLON—unaffected by oil or rotting. Double tensile strength of usual cotton yarns. Our Trade-marked Blue Margin, 3" on each edge has NYLON reinforced cotton warp yarns.

Available in both

COTTON and ASBESTOS FELTS.

Order one for your *toughest* position and see what this important development means in dryer felt savings.

*U.S. Patent applied for

Morey Paper Mill Supply Co.

309 SOUTH STREET, FITCHBURG, MASSACHUSETTS

Sole Distributors of Dryer Felts Manufactured by

The Abney Mills, **BRANDON** Dryer Felt Mill
GREENVILLE, SOUTH CAROLINA

"BLU-NYLEDG"
for greater mileage



PETER J. ONKELS (left), General Manager and Purchasing Agent, Pacific Coast Paper Mills of Washington, who was largely responsible for speedy and efficient construction of new No. 3 Mill. Born in Appleton, Wis., he worked under J. J. Herb in Merriton, Ont., New Westminster, B. C., and Bellingham—in that order.

VICTOR A. HUGHES (right), native of Bellingham and University of Washington alumnus 1925, has been with the company since 1927 and is now its Secretary-Treasurer.

set. Hypoid gear units are installed at the Yankee dryer, calender stack, press and couch, these being fully enclosed type reduction gears. Only three belts on the back side of the machine are used to drive the gear units from a line shaft overhead. There is ample room and safety character to the back side in the roomy machine room.

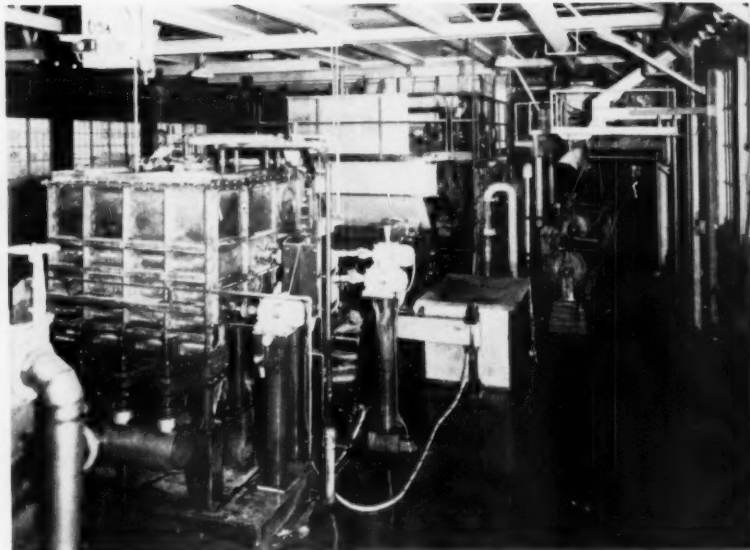
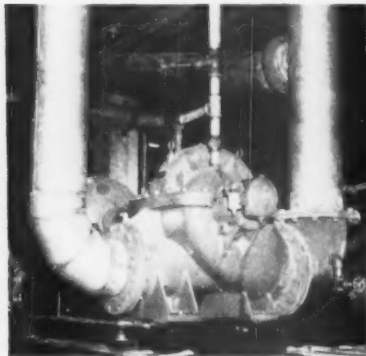
William W. Nugent Co. of Chicago supplied the oiling system for the machine. It consists of filters, pumps, pressure tank and controls for oiling. Midwest-Fulton supplied the drainage system. A Yale 2-ton monorail crane handles rolls at the dry end.

For the finishing end, four new toilet rewinders were being supplied by Paper Converting, the last two being installed in January.

J. J. Herb and His Sons

John Jacob Herb, with assistance and support of relatives and associates from the Fox River Valley of Wisconsin and from Ontario who had faith in his dream, built and started up the New Westminster mill in 1922; the Bellingham mill in 1925, the latter at first being a converting plant. Now they are operating five machines seven 24-hr. days a week. These were

BINGHAM PUMP CO., of Portland, Ore., supplied this 5,000 gals. capacity, 12 x 10 ft. Fan Pump for new No. 3 Machine at Pacific Coast Paper Mills.



THIS INTERESTING BACKSIDE view of new No. 3 Machine at Pacific Coast Paper Mills of Washington shows how commodious and open the drive area is. Only three belts are required and these are shown elevated from the floor for accessibility and safety. Below low head Air-Cushioned Control Flow Headbox is shown at front left in this picture.

the first specialty mills built in the Far West.

His sons are presidents of the two companies, F. J. "Bill" Herb, at Bellingham, and Elmer M. "Hunce" Herb, at New Westminster. Both were born in Appleton, Wis.

J. J. Herb, now 77, is chairman of both companies. At the age of 29, J. J. Herb had worked up to superintendent at Thilmany Pulp & Paper Co. in Kaukauna, Wis., ten years later he built and was superintendent of the Interlake Tissue Mills at Merriton, Ont. and ten years after that he headed west.

Onkels Directed Expansion

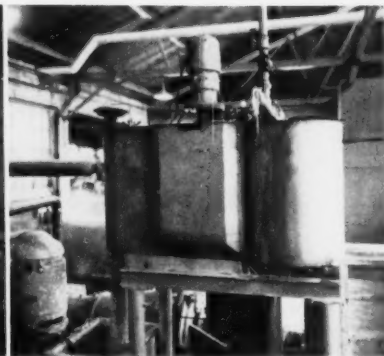
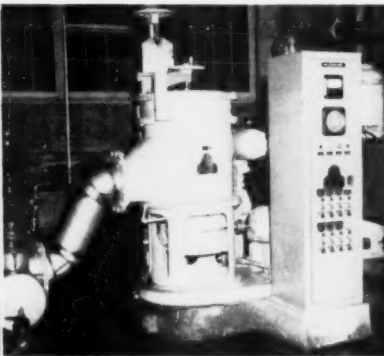
Peter J. Onkels, who has been mill manager and purchasing agent at the Bellingham mill since 1949, was largely responsible for the rapid and efficient job accomplished in the completion of the new No. 3 mill there. His long experi-

ence and ability were reflected in the superb engineering achievement and particularly in the fact that it was just six months—almost to the very day—from the time ground was broken until the first paper was made.

Mr. Onkels, also a native of Appleton, started his career sweeping out a Midwest mill. Pete Onkels and his brother, Ray, went to Merriton to work under J. J. Herb and then went to the Pacific Coast with him. Ray, 20 years superintendent at New Westminster, is now retired. Pete Onkels was a machine operator at Merriton, then machinetender at Westminster, and then machinetender, superintendent and now manager at Bellingham.

HARVEY KELLY, paper mill superintendent at Great Lakes Paper Co., Fort William, Ont., until recently, has joined the Crown Zellerbach Corp. at Port Angeles, Wash.

SHARTLE BROTHERS SELECTIFIER with its own control panel screens foreign matter from stock directly ahead of No. 3 Machine Headbox at Bellingham.



A REMARKABLE RECORD ON A GREAT MACHINE

*and made with the aid of
2,000,000 c.f.m of air!*

Below is an excerpt from the trade press report on Mr. Crowder's talk at the recent Engineering Conference at Cincinnati where he described the amazing performance record of Macon Kraft Company's huge new machine—"The Buccaneer"—which is completely equipped with Ross Air Systems.

**World's longest
and largest
machine hood**

Macon Kraft Company's new "Buccaneer" machine showing huge ROSS Insulated Panel Hood, 332 feet long. Ducts above, fitted with special distribution heads, are directing air toward machine room roof.



During a recent 24-hour period the Macon machine produced 838.99 tons of kraft. Mr. Crowder raised the eyebrows of other machine operators and had the engineers making some hasty calculations with pencils and slide-rules when he established that "only 1.24% of the total water to the wire was removed in the dryer section." The stock was at a consistency of .73%. The machine was running 1045 f.p.m. Moisture removal was computed as 97.4% of the total to the wire. It took 263,016 lbs. of steam per hour for drying and ventilating.

feature of the modern ROSS
AS for Macon Kraft Company

For its magnificent new mill
Company has installed

Having announced in April 1950 (see above) Macon Kraft Company's advanced type of Ross Heating, Ventilating and Drying Systems, we are justly proud of the important part they have played in the astounding moisture removal ability of this great machine running at high speed.



**J. O. ROSS ENGINEERING
CORPORATION**

MANUFACTURERS OF AIR PROCESSING SYSTEMS

444 MADISON AVENUE

NEW YORK 22, N.Y.

201 N. Wells Street, CHICAGO-6 • 79 Milk Street, BOSTON-9 • 9225 Grand River Avenue, DETROIT-4 • 600 St. Paul Avenue, LOS ANGELES-17
ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

FEBRUARY 1951

41

SHORTAGES OUTLOOK BRIGHTER

On the eve of Paper Week the concern over materials and supply shortages was growing wider and deeper in mills throughout the nation. Equipment makers were finding it increasingly difficult to obtain metals to fill orders for pulp mills because the latter were exempt from pressures of DO ratings and, therefore, could not extend urgencies and priorities which would help machinery builders to satisfy their wants. Thus far no DO ratings were obtainable for supplies and commodities used for maintenance and repair.

Except for some items like stainless steel, almost unobtainable, the demand for metals had hardly begun, in the light of U. S. Commitments on armament.

The squeeze for chemicals and other supplies was more pressing. Sulfur outlook seemed increasingly bleak. By January two major producers advised customers of a 20% cut.

Two emergency meetings by APPA committees on sulfur and other chemicals did not obliterate the facts. Despite huge recent investments by sulfur producers to make synthetic sulfur as by-product of the petroleum industry (and despite painfully small tonnage and high costs by that route) several pulp and paper men expressed a feeling the sulfur industry might be too resigned in acceptance of the facts. They meant by this that sulfur producers might exert more influence, if possible, on the government for U. S. pulp mills, as they were shipping sulfur to Canada for fertilizer products.

Pulp and paper men counter with suggestions of pyrites areas not worked.

So having faced already the prospect of running low on wood due to shortage of manpower (a prospect increasingly grim) the industry faced a second real shortage: we are running out of some

chemicals and mill men complained we cannot go on supplying the world and U. S., too.

On the problem of DO ratings for suppliers and equipment makers, pulp men are consistent to their original theory that raw supply commodities should have freest flow possible outside priorities. There is at present no thought of asking to be re-instated on the DO list so as to extend priorities; industry men feel the problems of suppliers and machinery men are about identical with their own. They point out that—as was not the case last war—the vital role of pulp and paper is made plain early by its emphasis in the whole Marshall Plan program. Logic and reality, said one posted source, should soon create an implied but valid "DO" on any legitimate order from a mill.

Noticeable was the fact that shortages did not yet make for pessimism; mill men felt that, when logic and reality replaced confusion in Washington, that same re-

ality would include realism in competition for metals and other supplies by the military; much greater than last war, much longer, too. Pulp's assumption of the full role of world commodity, the U. S. and Canada production almost as vital to North America as once coal was to Britain's economy, in the opinion of some meant surer sailing for mills eventually.

Ingenuity in meeting the initial problem involved in that gigantic project was evident already. Machinery makers were doing maintenance and repair from stockpiles ingeniously contrived; truck builders were using steel instead of copper for radiators; board and carton mills were advising less materials in cartons, and their re-use. There was a reaching out for every new device to save manpower or time or materials, and increase production. There was consolidation of pulp production to cut down transportation on the part of some integrated mills.

INDUSTRY STAND ON EUROPE



PULP AND PAPER was first major U. S. industry to state resource facts to foreign allies in European Marshall Plan hearing in Washington. Spokesmen for this industry included (l to r): HUGH H. HANSON, President, W. O. Hamilton & Sons; R. M. BUCKLEY, Vice President, Soundview Pulp Co.; REGINALD L. VAYO, Vice President, St. Regis Paper Co., and GLEN AMOS, representing American Paper & Pulp Association.

Foreshadowing by 48 hours the warning of ex-President Herbert Hoover that the U. S. might well begin to re-evaluate its resources, and European countries to heighten their own efforts, representatives of the pulp and paper industry took a stiff stand before the visiting Pulp Committee of OEEC (European Marshall Plan) in Washington in late December. The U. S. group's stand was against shipping war-essential pulp and paper abroad except for specific Western Europe defense needs.

Not lack of sympathy, but cold statistics involving North American and world needs, formed the base of the stand taken by a group led in the discussion by James E. Ritchie, executive manager of the U. S. Pulp Producers, who has been forecasting the present situation for more than a year. The meeting was called by Joseph Atchison, head of the pulp and paper division of ECA. The U. S. government was also represented by an official of the State Department. Present from industry were R. M. (Mike) Buckley, vice president, Soundview Pulp Co.; Reginald L. Vayo, vice president, St. Regis Paper Co.; Hugo H. Hanson, president, W. C. Hamilton and Sons; Downing P. Brown, vice president, Brown Co.; Robert Evans, Olin Industries, Inc., and Jacque Siraud, Rayonier, Inc. The ECA official had notified Mr. Ritchie, and Karl Clauson, secretary-manager of

the American Pulp Consumers, as well as E. W. Tinker, executive secretary of APPA, who was represented by Glen Amos, as Mr. Tinker was on the West Coast at the time. These association officials were asked to bring with them an industry group small enough for close discussion, and those present were felt to be representative of market pulp producers, pulp consumers, integrated mills and dissolving pulp interests.

They met with Gilbert von Giannellia, secretary of the Pulp Committee of OEEC, and Max Schmid, widely known here and abroad as general manager of Waldohf in Germany. Mr. von Giannellia is interested in Australian mills. The two carried full authority in their field of the wider OEEC commission in the U. S. to discuss allocation of supply commodities among western powers, as forecast via reliable sources

CALENDAR OF MEETINGS

- TAPPI Engineering—Pacific Coast—Tacoma, Wash.—Feb. 6.
- LAKE ERIE Papermakers and Converters—Materials Handling Session—Hickory Grill, Cleveland, Ohio—Feb. 16.
- PAPER WEEK—APPA and Salesmen at Waldorf-Astoria, TAPPI at Commodore Hotel, New York—Feb. 19-23.
- NPTA—Annual Convention, Waldorf-Astoria Hotel, New York—April 2-4.
- PACKAGING—National Exposition, Auditorium, Atlantic City, N. J.—April 17-20.
- NAT. MATERIALS HANDLING Exposition, International Amphitheatre, Chicago—April 30-May 4.
- ENVELOPE MFGRS. Assn. Annual Convention, White Sulphur Springs, W. Va.—June 17-20.
- PAPER & TWINE Assn. Annual Convention, French Lick Springs, Ind.—June 21-23.
- SUPTS.—National Convention—Multnomah Hotel, Portland, Ore.—June 24-29.
- SUPTS.—N. Y.—Canadian, Saranac Inn, Saranac Lake, N. Y.—Sept. 6-8.
- NPTA Fall Convention, Stevens Hotel, Chicago—Oct. 4-6.

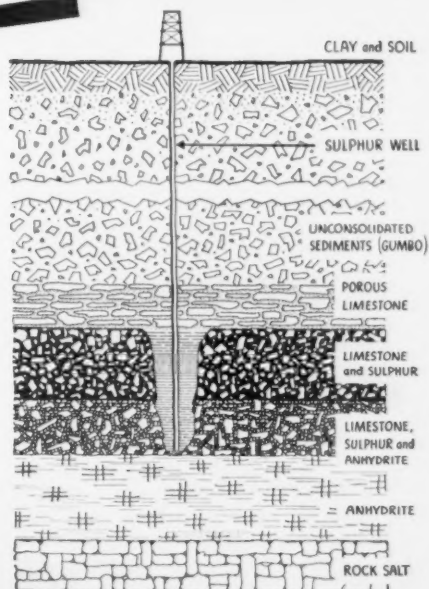
SULPHUR

***Interesting Facts Concerning This Basic Raw Material from the Gulf Coast Region**

*DEPOSITS...


Practically all of the elemental sulphur used in this country comes from mines in Louisiana and Texas.

There, the sulphur deposits occur in the cap rock overlying certain salt domes. The sulphur is mined at depths of 300 to 2,000 feet below the surface. It is melted in place by pumping into the deposit water heated under pressure to a temperature above the melting point of sulphur. The melted sulphur flows away from the limestone and is pumped to the surface where it is allowed to solidify in vats. By such means sulphur nearly 100% pure is produced.



**Loading operations at our
Newgulf, Texas' mine**



TEXAS GULF SULPHUR CO.
75 East 45th St.  New York 17, N. Y. **INC.**
Mines: Newgulf and Moss Bluff, Texas

in an exclusive PULP & PAPER feature four months ago.

Before arrival of Mr. Schmid and Mr. von Giannellia the over-all purpose of OEEC discussions had been approved on highest levels, as it was indicated would be the case in these pages, and was a point in the Truman-Atlee agreements.

While pulp prices were not discussed at the Washington meeting they are, as stressed here a quarter-year ago, implicit in the general idea of world allocation (exclusive of Soviet powers) and were also mentioned in the Truman-Atlee announcement. According to a reliable student of the situation, controlled western world pulp prices on various grades would be sought as a necessary part of any agreement.

Europeans Disappointed.

Mr. Schmid and Mr. von Giannellia were disappointed in the outlook as revealed by industry men at the ECA-sponsored meeting, particularly because their main need was stated in terms of unbleached kraft. The U. S. answer thus far: No. The reason: Facts of supply and demand. Alternate suggestion: The U. S. may be able to ship kraft bags or other finished paper products, instead of pulp and paper.

There was even a reservation there. A preference would be given to orders aiding the European defense efforts.

So far, checking shows the pulp and paper industry to be the first major one in the U. S. to indicate such a stark reality to our foreign allies; also, it is one of relatively few industries which has sharply inventoried its production and the demand so far in advance.

That the foreign mill men recognized the facts was clear in the reasonableness of their approach in the Washington discussions. Nonetheless, in New York the following week that they were still hopeful, PULP & PAPER was informed by dependable sources. Contact with Mr. Schmid on the eve of his departure for Germany revealed the belief that certain European exports, some in pulp itself, might constitute a generally agreeable leverage.

Effect of the giant over-all defense authority headed by Charles E. Wilson, retired president of General Electric Co., on wood activities of both NPA and NSRB was not defined as this issue went to press. But NPA's LeRoy Neubrech and the various members of the Industry Advisory Committee were still on deck and functioning; and Mathias Newenhaus, NSRB forest products chief, appointed several new lumber and wood products executives.

One thing was certain; during the next quarter there would be many more industry men in Washington than now.

Allocation Chief Coming

Those close to industrial circles in Washington look for designation of a pulp and paper machinery allocation chief very early in February if not before, closely following on the heels of the appointment of a pulp and paper chief from industry.

NEWS IN BRIEF • • • AND BULLETINS

LOUISIANA MILL IS ADDING FIFTH PAPER MACHINE

The Brown Paper Mill Co., Inc., is adding a fifth paper machine at its West Monroe, La., operations—a rebuilt machine. This mill has four 176-inch Fourdriniers with capacity for 550 tons daily of kraft board, bag and converting paper. It uses rotary digesters. H. L. Brown is president and top operations men are Theodore R. Moore, vice president and general manager; Bunn Beasley, gen. supt. and secretary; Bruce E. Brooks, asst. gen. supt.; Orren Getchell, paper supt., and Claude Metcalfe, pulp supt. . . .

NATIONAL GYPSUM PLANS 4TH MILL IN SOUTHWEST

Although temporarily held up pending completion of negotiations with military authorities, National Gypsum Co. is expecting a go-ahead for new \$4,000,000 paper mill at Pryor, Oklahoma. Would produce high quality paper liner for gypsum board production at its other three western plants—Medicine Lodge, Kan., Fort Dodge, Ia., and Rotan, Tex. At Medicine Lodge a new 800-ft. long gypsum board plant and plaster mill is being built. Fort Dodge capacity is being increased 25%—board machine and plant being extended 100 ft. President Melvin H. Baker, Buffalo, N. Y., said all expansion totals \$10,000,000 investment. . . .

DESCRIPTION OF NEW ST. REGIS MACHINES

St. Regis' \$30,000,000 two-mill expansion in Florida, previously announced here, has been led off by placing of orders for a Beloit 230 in. Fourdrinier machine to make kraft papers at the new mill being laid out at Jacksonville, and a Bagley & Sewall 228-inch wide multiwall kraft machine for the Pensacola addition. Both are theoretically designed for potential 2,500 f.p.m. speeds, but of course, auxiliaries and supply will control this. . . .

ST. HELENS MILL LAUNCHES \$3,600,000 EXPANSION

A \$3,600,000 program extending over two or three years at St. Helens Pulp & Paper Co., St. Helens, Ore., will increase its kraft paper capacity from 175 to 225 tons daily, announces Pres. Max R. Oberdorfer, executive vice pres. and gen. mgr., and F. S. Morgan, plant engineer, are in charge. Nearly every department will be improved, with new drive, presses and dryers for No. 1 machine; a modern multi-stage bleach plant; brown stock washers; chip and pulp screens; chipping increase; another digester; new recovery furnace with waste heat boiler; a precipitator; water treatment plant, and additional causticizing. . . .

\$4,500,000 EXPANSION AT NEKOOSA-EDWARDS MILLS

A new 180-in. wire (165 in. trim) Pusey & Jones Fourdrinier paper machine is ordered for delivery to Nekoosa, Wis., mill of Nekoosa-Edwards Paper Co., by fall of 1952. While replacing No. 3 at Nekoosa, it will increase production 50 tons (present capacity about 140 tons). At 1200 f.p.m., the new machine's capacity alone will be 140 tons daily, making fine papers of bleached kraft and sulfite furnish. A 400 x 65 ft. machine room is to be built. This is part of a \$4,500,000 program beginning with a new 50,000 sq. ft. warehouse at Port Edwards mill, announced by Pres. John E. Alexander. Three new mild steel kraft digesters, 11 x 45 ft., 3600 cu. ft. capacity, are being built for Nekoosa. Also at Nekoosa, continuous causticizers are being installed and vacuum evaporator capacity will be increased. No sulfite mill expansion is planned, although the warehouse there will allow longer runs. . . .

NEGOTIATIONS FOR PURCHASE OF SORG MILL

Negotiations were reported under way in mid-January between Canadian Forest Products Ltd., of Vancouver, B. C., J. G. Prentice, president, and Sorg Paper Co. of Middletown, O., for purchase of idle Sorg Pulp Co. kraft mill at Port Mellon, B. C. Canadian Forest Products, one of biggest lumber producers in Far West, would be following lead of other major British Columbia forest industries by entering pulp field. One report was it had paid \$3,000,000 for the mill and planned to nearly treble investment. Port Mellon had been modernized at cost of \$1,500,000 and brought to 140 tons capacity before shutdown year ago. . . .

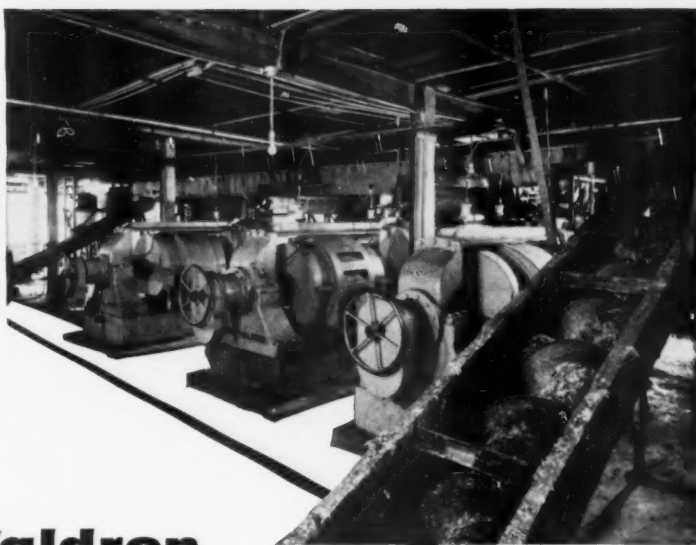
CHARLESTON MILL MODERNIZES NO. 1

With the start-up of No. 1 board machine, North Charleston mill of West Virginia Pulp & Paper Co. in January brought into play all extensive preliminary modernization phases detailed in PULP & PAPER many months ago. No. 1 had undergone a 13-day major rebuilding job which included a new stock furnish system, a complete new Fourdrinier improved press and additional dryers. Production increases are expected in time, according to recently appointed manager L. Frank Thompson. Modernization, begun 18 months ago, included new recovery units, precipitator, lime kiln, evaporators, new wood processing, vacuum washing system, new digester, new screen room, new fan pump. . . .

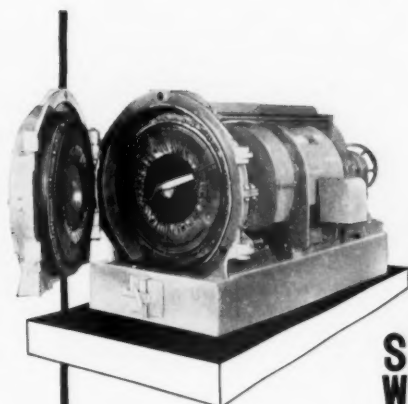
NEW ZEALAND PROJECTS NEW MILL

The New Zealand government is reported to be expediting plans for development of a newsprint industry at a cost of some \$84,000,000, utilizing the Kaingaroa forest, the world's largest man-planted timber tract. Tests have indicated the feasibility of establishing a sawmill with a 70,000,000 feet capacity annually and, a newsprint mill capable of producing 100,000 tons a year, as well as a pulp mill. . . .

**Mills that
compare
Refiners
choose
Sprout-Waldron**



The MAIZEWOOD Installation
A battery of S/W Refiners and stock conveyors recently installed at the Maizewood Insulation Co., Dubuque, Ia.



S/W Refiners do a wide variety of jobs—all of them thoroughly and economically. Here are some applications: refining kraft, soda, and sulphite knotted and fine screen rejects; hogged bull screen rejects; knotted and second screen rejects of raw groundwood; semi-chemical chips of all kinds; spent chips after extraction process; bagasse, straw, and similar grasses; breaking down lumps in reclaimed waste paper stock; reduction and refining of rag and other half stocks, etc., etc.

When all the pros and cons are weighed about pulp refiners, your choice will be Sprout-Waldron. Here is a high quality refiner that does more at less cost. A humdinger in any type of pulping, it far outperforms similar equipment in semi-chemical operations.

Its rugged construction, precision engineered, includes the unique peripheral control ring feature. This provides great flexibility of adjustment, enabling you to produce a wide variety of pulp characteristics. **With the Sprout-Waldron you can pinpoint exact pulp requirements.** Long-life plates are available in many styles...are easily changed and inexpensive.

Your initial investment in a S/W Refiner is comparatively low. High production rates, economy in power consumption, ease of operation, adjustment, and maintenance, mean additional savings.

Let a Sprout, Waldron representative explain how these refiners can step up your output and cut operating costs, or ask for Bulletin 41. Address Sprout, Waldron & Co., Inc., 32 Waldron Street, Muncy, Penna.

Sprout-Waldron
Manufacturing Engineers
SINCE 1866
MUNCY, PENNSYLVANIA

SLATED FOR HIGH POST



Gabriel J. Ticoulat (in picture) who, just after being elected a vice president of Crown Zellerbach Corp., was slated to be the chief of a newly created Pulp, Paper and Paperboard war production authority of some kind organizing in Washington, D. C.

Crown Zellerbach Corp. approved his loan to the government in December for one year and the appointment was cleared by top government authorities.

A veteran in Crown Z. Mr. Ticoulat—known as "Tic" to many friends—had been manager of sales of the Crown-Willamette Paper Co., division of Crown Zellerbach and his offices are in San Francisco.

BULLETIN—Hayward Dies

Ralph A. Hayward, one of the industry's greatest leaders, president of KVP Co. 14 years and general manager since 1924, died Jan. 11 at Ann Arbor, Mich., hospital. Born April 16, 1895, at St. Clair, Mich., he was manager of Edmundston, N. B., and Newton Falls, N. Y., mills before going to Kalamazoo, Was. U. of Mich. regent.

Abitibi's B. C. Chief

Leslie Cleminson, Detroit-born assistant manager of all Abitibi mills, has been appointed new general manager of British Columbia Pulp & Paper Co., purchased by Abitibi.

ERNEST E. KERTZ, Pacific Coast equipment representative, died suddenly in Portland, Ore., Jan. 15.

New Beloit Ordered for Roanoke Rapids Mill

A new Beloit Iron Works 246-in. Four-drummer paper machine features a projected \$5,800,000 expansion program for Halifax Paper Co., Roanoke Rapids, N. C., scheduled for completion by December, 1952, announced F. D. Gottwald, president. An RFC loan of that amount has been negotiated.

A new coal or oil-fired boiler, 45,000 lbs. per hr. capacity; high density pulp storage tower and paper mill are main units with Rust Engineering as contractors. The Beloit machine will have a pressure type headbox, 33 paper dryers and Ross-Grewin ventilation.

Start-up During February

The new dissolving pulp mill of Columbia Cellulose Co., Ltd., Celanese subsidiary, near Prince Rupert, will come into production during February, Harold Blanche, president, has forecast.

D. A. EVANS, a director and former vice president of Powell River Co., died at Powell River, B. C., Dec. 17, after a long illness. Welsh-born, Mr. Evans was associated with the industry in Quebec, Ontario, Newfoundland and Manitoba before going to Powell River as resident manager in 1936.



IN INDUSTRY NEWS (I to V):

WILLIAM HERBERT SMITH, who joined Abitibi Power & Paper Co., Toronto, in 1914, has been made its Executive Vice Pres. English-born, Quebec-educated, he was Treasurer from 1916 and Vice Pres. from 1946.

EDWIN L. OLIVER, JR., elected Vice Pres. of Oliver United Filters Inc., with offices in Oakland, Calif. A graduate of U. of Calif., he has been with the company 17 yrs., takes over duties of Exec. Vice Pres. P. A. Hoyt on six months leave for health.

VELDEN M. ANDERSON, General Supt. of Fir-Tax Insulating Board Co., St. Helens, Ore., has been promoted to Mill Manager, filling the top plant position left vacant by death of L. V. Frisch, General Manager. Mr. Anderson has been with organization since 1930, this year plant was started.

R. C. MACDUFFEE, transferred to Chicago as Sales Engineer for Process Equipment for A. O. Smith Corp., of Milwaukee. He has spent much time with Henry A. Schmitz, Pulp and Paper Industry specialist, and is serving North Central district. He was a fighter pilot for 3 years in Europe, a prisoner in Germany, came back to graduate from Iowa State in 1948.

EDWARD C. HOLLINGSWORTH, vice president in charge of sales, River Raisin Paper Co., Monroe, Mich., died Dec. 12, at the age of 68. Burial was at St. Mary's Ohio. He was formerly with Ohio Box-board and Robert Gair, joining River Raisin in New York in 1914.

New Jordans for Cuba

Primera Papelera Cubana, S. A., Havana, has installed two E. D. Jones and Sons jordans, stainless steel equipped, and powered with 250 h.p. Fairbanks-Morse synchronous motors. Engineering advice and installation supervision was by Charles Vickery, sales manager.

Son for Chas. S. Bartons

A son was born to Charles Sumner Barton, vice president and general manager of Rice Barton Corp., Worcester, Mass., and Mrs. Barton, on Jan. 5. They have a daughter. Mr. Barton flew to Lewiston, Idaho, in mid-January to see the new Rice Barton machine in its first month of operation at Potlatch Forests, Inc.'s, new kraft pulp and paper mill.

ENGINEERING CONFERENCE IN TACOMA

Experience with two new equipment developments—the O. A. Smith spot-welded stainless steel (modified type 316) sulfite digester at Rayonier's Port Angeles mill and a new Combustion Engineering wood refuse burning spread stoker at Weyerhaeuser's Longview operations—will feature the 1951 annual Pacific Coast Engineering Conference at Tacoma, Wash., on Feb. 6.

The reports will attract considerable interest in the coast TAPPI-sponsored sessions, which begin at 2 p.m. in the Winthrop Hotel. John B. Gray, chief engineer of Rayonier, Hoquiam headquarters, is moderator. The meeting was changed to Tacoma because the legislature session monopolized hotel space at Olympia, where first scheduled.

PULP & PAPER, Feb. 1947 issue, carried an exclusive illustrated article on the 56-ft. high, 15-ft. diameter Port Angeles

Pulp Importers Elect

Elected at a recent meeting of American Wood Pulp Importers at Sherry's, New York, were the following 1951 officers: Stanford G. Blankinship, president; Albert Blattman, vice president; Richard F. Kist, secretary; V. Ramsey, treasurer; James Donaldson, director.

Wheelwright Manual

"Practical Paper Technology," a new manual edited by William Bond Wheelwright, comprises paper course lectures at Lowell Textile Institute and Carter, Rice. Price, \$2.25, M. J. and W. B. Wheelwright, 14 Hurlbut St., Cambridge Mass.

Harry Richmond Retires

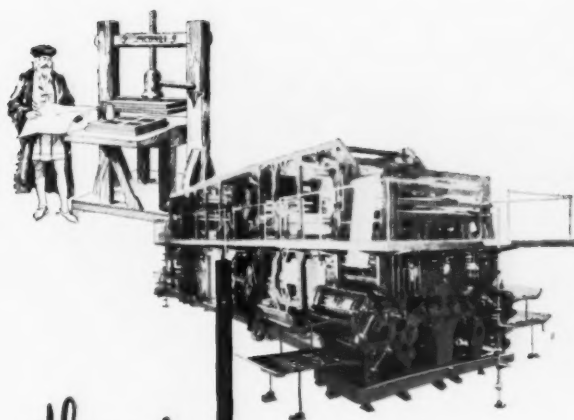
For 23 years with Electric Steel Foundry Co., many of these years as its chief engineer and lately as director of Esco Industrial Institute for training of its personnel, Harry H. Richmond finally decided to retire as of Jan. 1. His interest in the Northwest pulp and paper industry, in which he helped pioneer so many developments, of course, will continue.

digesters—first of its kind ever installed. Linings are only 7/64th in. thick, backed by 11/6-11/4 in. steel shell. It was described by Rayonier engineers as a plant-scale experiment when it was installed. But five years of testing and experiment preceded the installation.

The top head recently was streamlined.

Bryan Rauschert, resident engineer at Port Angeles, will give this report. Conant Dodge, H. A. Smyth and L. R. Guthrie, Weyerhaeuser engineers, make the report on the Combustion spread stoker.

Other Tacoma papers: Motor application problems in mills by John Schuh, chief of design and planning at Longview Fibre, and a report on a Riley boiler and modern spreader burning waste wood by the Eugene, Ore., Water Board. O. B. Falls, of General Electric, will discuss the power situation at the dinner.



there is
always room

FOR IMPROVEMENT

That's why Bagley & Sewall have developed
an entirely new concept of

WINDING EQUIPMENT

By the time this advertisement is printed, the first units of our modern slitter-winders will be coming off the production line. They will be installed in several mills . . . destined to establish new records in speed, economy and efficiency. These first units were ordered from blueprints. They were ordered because even in the blueprint stage they showed convincing evidence of their superiority. They were ordered because the hundred-year old manufacturing experience and out-

standing reputation of Bagley & Sewall provided additional guarantee of their sound design and honest workmanship.

If you wish to modernize and speed up your winding, slitting, or laminating operations or are contemplating to expand present facilities, it will definitely pay you to investigate the radically new and greatly improved machines designed by the B-S engineering staff. Write today for full details to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N. Y.

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builders of

BAGLEY & SEWALL

WATERTOWN, NEW YORK

PAPERMAKING MACHINERY

SINCE 1853

500 FIFTH AVE., NEW YORK 18, N. Y.



THIS PICTURE TAKEN BY PULP & PAPER'S SOUTHERN ASSOCIATE EDITOR on visit to Kingsport, Tenn., mill of THE MEAD CORP., shows a glimpse of a "planned community" across rooftops of the mill. Kingsport presents an attractive appearance to the visitor.

Tennessee Efficiency PLANNED TOWN--IMPROVED MILL



AIR VIEW OF MEAD CORP. Mill at Kingsport, Tenn. Taken after installation of dust collectors and all plumes coming from various stacks are water vapor except slight haze from boiler house stack.

Visitors to Kingsport, Tenn., may be pleasantly surprised by this community of wide streets, clean commercial section, and the vista of church spires rising through an abundance of trees that grace the residential areas. Their first thought is: "How can this be without planning?" And then, "How could that be in a town of 20,000 as old as this?" Surprisingly, the answer is that it is a planned community completely in keeping with ultra-modern large suburban developments.

Just inside Tennessee from the Virginia line, the area not only enjoys a widely diversified agriculture embracing many staple crops, fruits and livestock, but also is rich in minerals and forests. Here are the upper branches of TVA's Clinch and Holston rivers and the Clinch mountains.

When the Clinchfield railroad was built to bring out coal, its backers visualized an accompanying industrial development

to create freight traffic to help carry the cost. There was no Kingsport in 1918. It was then a blueprint showing where the residential, commercial and industrial areas would be; and locating sites for principal enterprises for a town of predetermined size. The first industry was a cement plant drawing rock from a 12-mile distant quarry.

The second industry was the Kingsport Pulp Corp., in this case a soda pulp mill

using hardwoods, erected in 1916. As our industry knows, this original plant was acquired by The Mead Corp., Chillicothe, O., and expanded through the years, a paper mill being added to contribute its share to the company's quality line of book, magazine and converting paper.

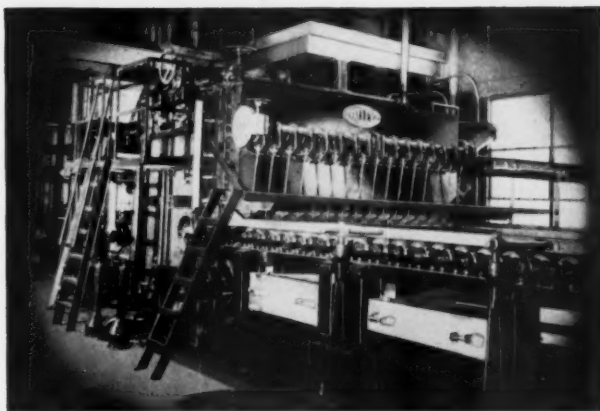
Recently completed has been a modernization program reflecting management's belief in maintaining its position by moving toward new processing efficiencies and increased operating economies through modern engineering techniques and equipment integration. As a result of the program, the Kingsport mill faces a new productive life.

Nor is this all. Embodied within the modernization were steps for minimizing stream and air pollution as an advancement in community relations and installations providing for greater working comfort for mill personnel.

The work was initiated following the close of World War II, with ground being broken for major installations in 1948. These efficiency reconversion tasks completed by Mead engineers included an Allis-Chalmers lime kiln, six Blaw-Knox digesters with auxiliaries, a General American Transportation Corp. evaporator installation, a Babcock & Wilcox soda recovery furnace and boiler, three Buell fly ash and dust collectors, a Koppers precipitator, and a J. O. Ross Engineering ventilating system.

The first project, the lime kiln installation was caused in part by rising lime prices. Also the mill had conducted experiments in furthering use of sludge as paper filler, the surplus sludge being washed into the sewers. The 170-ft. long

High retention of clay and titanium... with Swift's new process* Glue!



"A very high retention of clay and titanium!"

That's what papermen say when they use Swift's new process Glue as a flocculating agent in book paper production. It promotes greater retention of fibre and filler on the screens—valuable clays and titanium are not lost in the white water. Swift's new process Glue also aids in the even formation of the sheet. This is because Swift's new process Glue is a colloiddally active water soluble animal protein.

Swift's new process Glue is economical because it is used at low concentrations. No expensive agents are required in the glue solution. It is easy to prepare—easy to handle because it goes into solution quickly. It is also designed to have uniform non-foaming properties.

High recovery in Flotation-Type Saveall Systems, too.

Swift's new process Glue is also being used successfully in Flotation-Type Saveall Systems. Its great ability to "flock" fibres and fillers aids in the obtaining of clearer effluents. Swift's new process Glue is just as easy and economical to use in this operation as for clay and titanium retention—and mills report the same consistent and uniform results.



Creping of facial and toilet tissue.

Swift's new process Glue aids in the securing of improved uniform crepe when used in the production of facial and toilet tissue. This is because the high quality standards of Swift's new process Glue help maintain a constant mirror-like film on the drying roll.



****Swift's new process Glue made by an exclusive process!**

Swift's new process animal Glue is a highly efficient processing agent because it is made from fresh bones by an exclusive, patented Swift method... a method that assures a uniform, light-colored glue of unusual purity. This method permits precise synchronized control and minimizes contact with foreign or contaminating substances.

Swift & Company

Swift & Company
Adhesives Products Department PP-1A
Chicago 9, Illinois

Please send us your introductory trial shipment of Swift's new process Glue at the quantity price, to be tested for use in our operations. We understand, if not fully satisfied, it may be returned for credit at your expense. This offer expires March 31, 1951.

Firm _____
Address _____
City _____ Zone _____ State _____
Signed by _____

9-ft. diameter kiln has averaged 40 tons daily from 65 to 70 tons of mud (62% moisture content) using 3,000 gallons of fuel oil for burning and about 2,700 KW hours to turn the kiln and operate its auxiliaries. Kiln gases are passed through a Rotoclone type scrubber to minimize fly ash. Lime kiln results have been better than anticipated: lime quality is very satisfactory; sludge to sewer now negligible; operating costs slightly higher than calculated but worthwhile economies produced.

Replacement of Digesters

Replacement of ten digesters worn thin by corrosive action from caustic soda cooking since 1925 presented Mead engineers and their consultants with a problem. Mill development plans hinged on location of the new units. Reduced cooking pressures had made the old installation uneconomic. Preliminary and semi-final design was handled by Hardy S. Ferguson Co., with final designs and construction by the Austin Co., Cleveland, O. Construction started in 1948; production in 1949.

The six new Blaw-Knox digesters are of 11-ft. diameter, 49½-ft. height, 10-ton pulp capacity, and 3,900 cu. ft. chip volume per charge. Maximum design capacity is for 225 tons per day but only 140 tons is used currently. They are completely automatic with Foxboro controls and instruments. They are equipped with six Fibre Making Process liquor heaters and six 2,500 g.p.m. liquor circulating pumps; a Swenson heat recovery system; DeLaval stock and water pumps ranging from 300 g.p.m. to 1,000 g.p.m. The pumps are push-button controlled.

Uniform distribution of chips in the bins is credited with increasing useful capacity as much as 50%. Chips move from screens on a 30-inch wide Stephens-Adamson belt conveyor to a belt bucket elevator for journey completion to 120-foot elevation. Capacity is 80 tons per hour at 300 f.p.m. Above the chip bins, a Redler run-around conveyor with special gates for distributing.

Recovery Systems

The original (1916) recovery installation at Kingsport included evaporation to 50% solids, a rotary furnace, a fire pot furnace for burning coat, and a small fire tube steam boiler. By 1941 there were six of these installations with combined capacity of 132 tons. Consistent efficient operation could yield chemical recovery approaching 90%; 85% was regarded as good; and sometimes it slipped to 75%. High labor and maintenance costs were accompanied by atmospheric pollution by smoke and dust; and stream pollution by

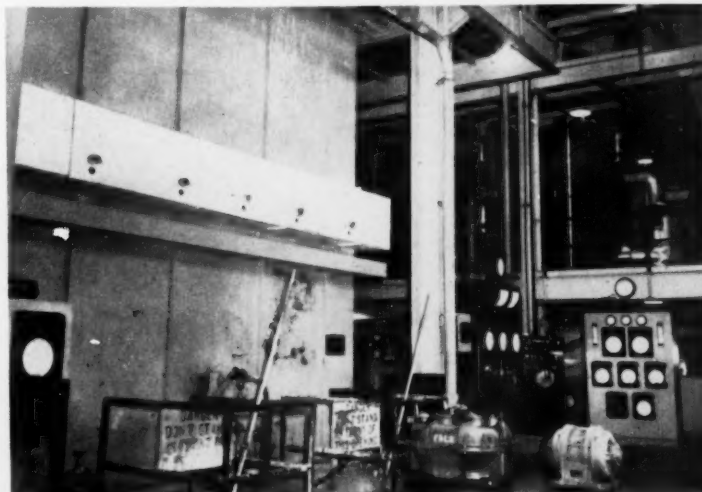
carbon residue. The Mead management interest in controlling disposal waste dates back to an installation at Chillicothe in 1930, and again in 1939 at Brunswick, Ga.

The solution provided for the Kingsport problem included a General American evaporator installation with liquor reduction to 60% solids, then a 70 ft. high Babcock and Wilcox recovery boiler designed to provide 107,000 pounds of steam per hour at 900 psi and 750 degree F temperature based on 225 ton daily mill pulp production. The gases pass through a B&W cyclone evaporator, then through a Koppers precipitator.

Auxiliaries include three automatically controlled turbine driven DeLaval boiler feed water pumps providing 300 g.m.p. against a total dynamic head of 3000-feet with feed water maximum of 228 degrees F. The pumps discharge into a Cochrane deaerating heater that raised temperature to 268 degrees F, using 30-lb. steam at 350 degrees with 200,000 lbs. of water per hour capacity. Liquor pumps are by Worthington and DeLaval.

The mill has a 16 million gallon capacity settling basin.

Further amelioration of the dust problem was met, after a 5-year study by



TOP VIEW SHOWS BABCOCK & WILCOX recovery boiler control floor with instrument board for flow and lbs. per hr. at left and large FOXBORO panel for temperature, condensate, etc., records at right. Above this panel is COCHRANE CORP. deaerating heater.

LOWER VIEW shows new 170 ft. long ALLIS-CHALMERS lime kiln adjacent to causticizing building, with reburned lime storage conveniently located above the kiln to conserve space. The kiln is served by Rotoclone and used oil for fuel.



Offices and representatives
in 60 cities in the United States,
Europe, Latin America, Africa, and Asia

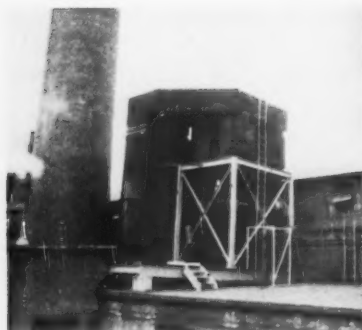
WOOD PULP PAPER



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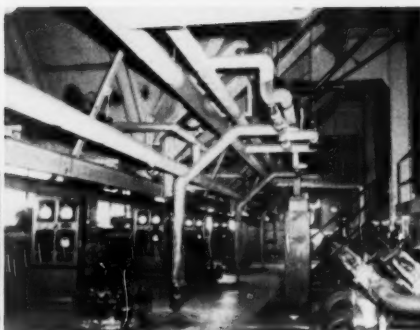
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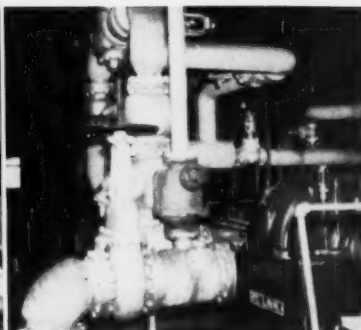


KINGSPORT MILL PHOTOGRAPHS taken by PULP & PAPER Editor.

ONE OF THREE BUELL Fly Ash installations at Kingsport—a well-liked nuisance suppression factor in mill operation.



DIGESTER HOUSE Operating floor at Kingsport Mill—showing tops of Blaw-Knox digesters, Foxboro control boards, etc.



DELAVAL STEAM TURBINE unit—400 hp. 875 r.p.m.—driving induced draft installation for B & W recovery boiler.

Mead engineers, by installation of Buell mechanical collectors for the three pulverized coal burning power boilers. Installation was effected by the mill maintenance department, being completed subsequent to completion of the new recovery boiler. The application of the Buell dust and fly ash collectors meets the regulations laid down in a Kingsport city ordinance adopted in 1948. The boilers are operating with a dust load of less than 0.35 grains per cu. ft. when figured at temperatures of 350 degrees F and when gases do not contain more than 50% excess air.

The power house produces 8500 KW/HR in electrical energy from four General Electric generators.

Ross Air System

Hot weather discomfort rising from disruption of natural ventilation by multiplication of mill buildings and higher post-war machine speeds has been diminished by management through instal-

lation of a system furnished by J. O. Ross Engineering Corp. Eight large fans draw 400,000 CFM of fresh, filtered outdoor air into the finishing room's ground floor level basement. Exhaust fans move the air from this space through strategically placed ventilators to the paper machine operating floor. Here the discharge is diffused more or less horizontally in streams of moderate velocity about 4-feet above the floor. At the same time, discharge of air removed from such heat sources as super-calenders and paper machine dryers is accelerated to 400,000 CFM through larger exhaust fans and natural vent stacks.

During cold winter months, about 200,000 CFM is passed through the basement plenum after being warmed by automatically controlled (60 degrees) steam coils. The balance of heating and ventilating is provided by existing standard installations.

Personnel is provided with additional facilities of an excellent tile-lined modern

cafeteria, first class locker rooms with forced air ventilated lockers, a good first aid station, and all safety devices.

Production of paper is completed in a finishing room equipped with air-conditioning and humidity control. The paper is "conditioned" here and packaged for shipment. A significant overhead sign suggests the "customer" is the next inspector.

Key Personnel

Executive personnel at the Kingsport Mill includes: George F. McCrea, division manager; Sydney W. Macbeth, assistant to division manager; W. H. Teter, general superintendent and production manager; A. S. Wells, division engineer; G. W. Peters, technical service director; O. E. Carter, paper mill superintendent; C. E. Roth, pulp mill superintendent; P. F. Donahue, finishing superintendent; E. R. Blankenship, maintenance superintendent; C. D. Gilsdorf, electric power and maintenance superintendent.



News About Industry People From Coast to Coast

NATHAN BERGSTROM, president of the Bergstrom Paper Co., Neenah, Wis., has submitted a plan to Neenah's city council for a future recreational center on the south end of Little Lake Butte des Morts—using residue from a proposed de-ink waste treatment plant to fill in about 32 acres. The filling would take 10 to 20 years. Mr. Bergstrom's father, Dedrick Waldemar Bergstrom, founder of the paper company, also helped develop many Neenah parks as long-time chairman of its park commission.

ROBERT JAMES ASKIN, who joined the industry in 1921 as a pulp tester with the old Fort William Paper Co., and who succeeded the late T. E. SILVER as manager of mills for Abitibi Power & Paper Co. in 1943, has been appointed by President Ambridge as vice president of Abitibi, in charge of manufacturing.

John H. Smith Dies

John H. (Jack) Smith, prominent industrialist of Portland, Ore., and former President of Hawley Pulp & Paper Co. (now Publishers Paper Co.), died Dec. 15. During the past 35 years he held several executive positions in the forest products industries. He retired two years ago as president of Western Coopersage Co. and of Hawley. At the time of his death he was vice president of American Mail Line. In 1934 he was elected first president of the Pacific Coast Association of Pulp and Paper Manufacturers, and continued as such until 1948.

DELMER ROBERTS, formerly of Calmar Steamship Co., has been named chief steam plant engineer of St. Helens Pulp & Paper Co., St. Helens, Ore., to replace **DON KELLER**, who has resigned, effective Jan. 1.

JESSE E. HAMILTON, who retired two years ago as sulfite pulp superintendent, Combined Locks Paper Co., Combined Locks, Wis., post he held 42 years, died at his Appleton home Dec. 3.

R. F. DITEWIG, Northwest Traffic Manager, Crown Zellerbach Corp., Portland, Ore., became president of Portland Transportation Club in mid-November.

Jim Allen, South Pioneer, Dies

(See Editorial—Page 27)

James H. Allen, vice chairman of St. Regis Paper Co., and one of the outstanding mill builders in the both early and recent growth of the Southern pulp and paper industry, died at the age of 70 on Dec. 18. His most recent activities were in Florida where he built the former Florida Pulp & Paper and Alabama Pulp & Paper mills. He was president of both companies. Later brought them into the St. Regis organization, in which he became a top official. He formerly was a top executive with International and Union Bag.

A. L. K. SWITZER of the woodlands department, LongLac Pulp & Paper Co., has been appointed to the Thunder Bay Timber Operators Association, succeeding J. H. Merrill, formerly woods division manager for Brumpton Pulp & Paper Co. at Red Rock, Ont., who has moved to Quebec.

ELKINS O. WHITMAN is new supervisor of industrial relations for the Lockland, Ohio, plant of the Gardner Board and Carton Co., says R. L. Siegel, director of industrial and public relations. Mr. Whitman is a native of Clarksdale, Miss. He was a student at Bucknell and Duke Universities.

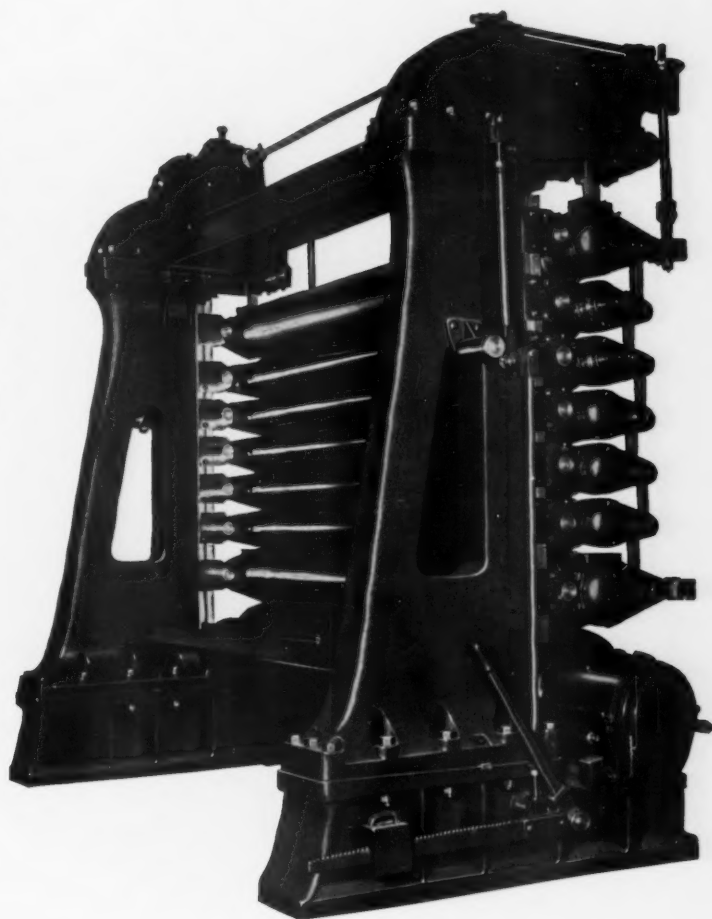
The **BAGLEY & SEWALL** OPEN-SIDE CALENDER STACK

This is probably the easiest calender stack to handle you ever used. All working parts are in plain sight and easy to get at. You can remove any roll in the stack by simply unscrewing four link shoulder bolts, removing two pivot pins, and out comes the roll. Simple as that!

It's a smooth-running stack. All the intermediate and top rolls are equipped with anti-friction bearings, and each bearing housing has a large-capacity oil reserve. The frame is solid — extra heavy construction to eliminate vibration and to absorb heavy impact loads.

Like all Bagley and Sewall equipment, this stack was designed for long service and ease of operation.

Write us when in need of a new calender stack. We're sure you'll like this one. It's definitely "tops" in performance.



BAGLEY & SEWALL

DESIGNERS AND BUILDERS OF PAPER MAKING MACHINERY

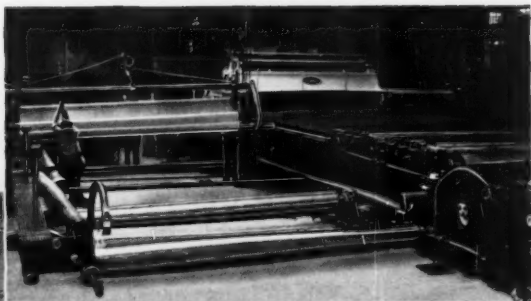
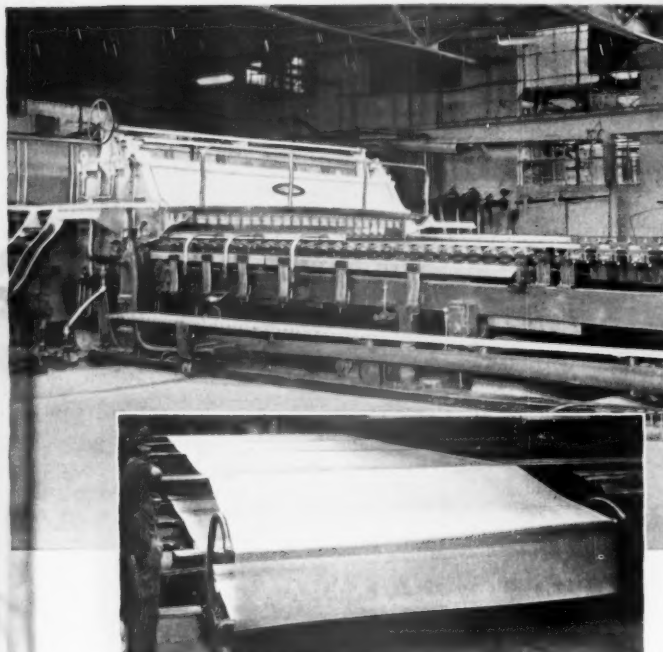
WATERTOWN, NEW YORK

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At right: undercarriage rolled into tending side aisle on suitable tracks ready for wire draping operation.



Above: Fourdrinier Part of improved "Rapi-Drape" design shown in operating position.

At left: wire draped on undercarriage ready for installation.

Wire Changing Time: 55 Minutes

"Rapi-Drape" Wire Handling is now being used successfully in these outstanding mills:

Southland Paper Mills, Inc.,
Lufkin, Texas
Hollingsworth & Whitney Company,
Mobile, Ala.
Southern Advance Bag & Paper Co.,
Hodge, Ala.
St. Mary's Kraft Corp., St. Mary's, Ga.
Union Bag & Paper Corp.,
Savannah, Ga. (2)
Hudson Pulp & Paper Co.,
Palatka, Florida (2)
Southern Paper Board Corp.,
Port Wentworth, Ga.
Fibreboard Products Inc.,
East Antioch, Cal.
St. Regis Paper Co., Tacoma, Wash.
Calcasieu Paper Co., Elizabeth, La.
San Rafael Paper Co., Mexico, D.F.
Papierfabrik Utzenstorf, Switzerland
National Newsprint Co., Ltd., India
Everett Pulp & Paper Co.,
Everett, Wash.

Here is a simplified, fast, safe method of changing Fourdrinier Wires. Down-time is greatly reduced. Operators report a complete wire change in 55 minutes or less. Takes less aisle space and there are no heavy parts to handle. No danger of deflection stresses or distortion as experienced with complete removal or cantilever change. Unnecessary to disconnect shake connections, suction boxes or showers.

In "Rapi-Drape" Wire Handling, pioneered by Pusey-Jones, the Four-

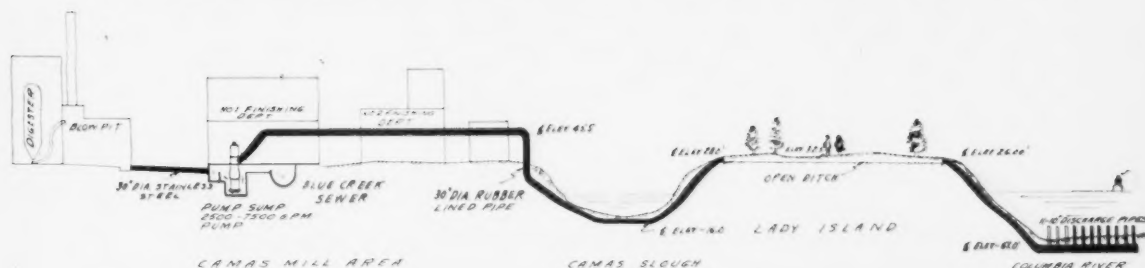
drinier as a unit remains in the operating position. The breast roll and the stretch roll are lowered, and the couch roll cantilevered to provide clearance. The back of the Fourdrinier is supported on frames. Features include a removable, power-operated undercarriage which supports the front side in perfect alignment at all times. Only parts which must be removed are the dandy roll, deckle and cut squirts.

Get the complete "Rapi-Drape" story . . . talk to a Pusey-Jones engineer.

THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-Making Machinery
Fabricators and Welders of All Classes of Steel and Alloy Products
Wilmington 99, Delaware, U.S.A.



"Big Inches" For SWL DISPOSAL PIPELINES IN WEST



SCHEMATIC DRAWING OF NEW WASTE SULFITE LIQUOR DISPOSAL PIPELINE AT CAMAS, WASH.

New developments in disposal of sulfite waste liquor are specially constructed pipelines, one now being laid at Everett, Wash., at cost of \$609,000, and the other just put into operation at Camas, Wash. The former, two miles in total length from the Soundview Pulp Co., and less than that from Weyerhaeuser's Everett mill, will carry their effluent to deep water in Puget Sound, 3,000 ft. from shore. At Camas, the pipeline is already dumping that mill's effluent deep in midstream, one mile out in the mighty Columbia.

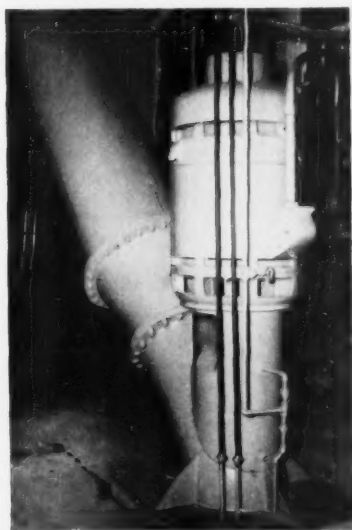
Both were built with approval of the Washington State Pollution Commission; both entirely remove effects and traces of the liquor from along the shores and areas frequented by fish.

From an engineering point of view, it is interesting to note both the similarities and differences in these pipelines—where and how stainless steel, rubber-linings, etc. are used; difference in outlets, etc. Here follow descriptions of both:

The Camas Pipeline

To entirely remove effects and traces of sulfite liquor from along Columbia river shores, Crown Zellerbach Corp.,

BINGHAM PUMP CO., Portland, Ore., supplied this 7600 g.p.m. even-flow, stainless steel vertical pump at pump sump in the Crown Zellerbach Mill's No. 1 Finishing Room at Camas, Wash., where it pumps dilute sulfite waste liquor 1840 ft. to Lady Island at rate of 2500 to 7500 g.p.m.



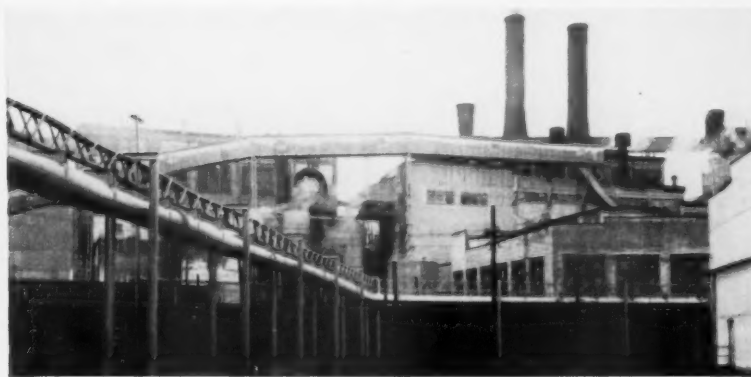
Camas, Wash., has built an elaborate system for dispersing dilute sulfite liquor wastes in midstream where water flow is consistently large and rapid. This system, initially placed in operation the first of the year, carries liquor wastes over a mile from the mill out into the stream to be discharged evenly at bottom level through the last 300 ft. length of pipe.

The system includes over one-half mile of 30 in. pipe supplemented by 3500 ft. of open ditch which carries the liquids across an island in the river opposite the mill. Waste sulfite liquor and wash water mix together enroute from blowpits to a collection sump via stainless steel pipes and previously existing wooden sewer. The collection sump is connected to a pump sump, located under No. 1 finishing room, by 120 ft. of 30 in. stainless steel pipe, discharging through a weir at pump sump. From there a Bingham even-flow stainless steel vertical pump of 7600 g.p.m. capacity pumps the dilute liquor through 1800 ft. of 30 in. rubber-lined pipe across Camas Slough to Lady Island where the pipe terminates in the 3500 ft. ditch carrying the waterborne wastes across the island to another 30 in. rubber-lined pipe through which the flow is by gravity. This last pipe extends another 760 ft. into the river.

Engineered for a maximum sulfite waste

(Continued on Page 84)

PORTION OF NEW SULFITE WASTE LIQUOR DISPOSAL PIPELINE, built at Crown Zellerbach mill in Camas, Wash., with approval of Washington State Pollution Commission, to carry dilute SWL to midstream of the mighty Columbia River to reduce concentrations. This is portion of 2600 ft. of 30 in. pipe rubber-lined by Griffith Rubber Mills. In background are: 1. to r., Kraft Mill, Steam Plant, topmost corner of Sulfite Mill. Low building at right beyond pipe is No. 1 Finishing Room; corner of No. 2 Finishing Room at extreme right.



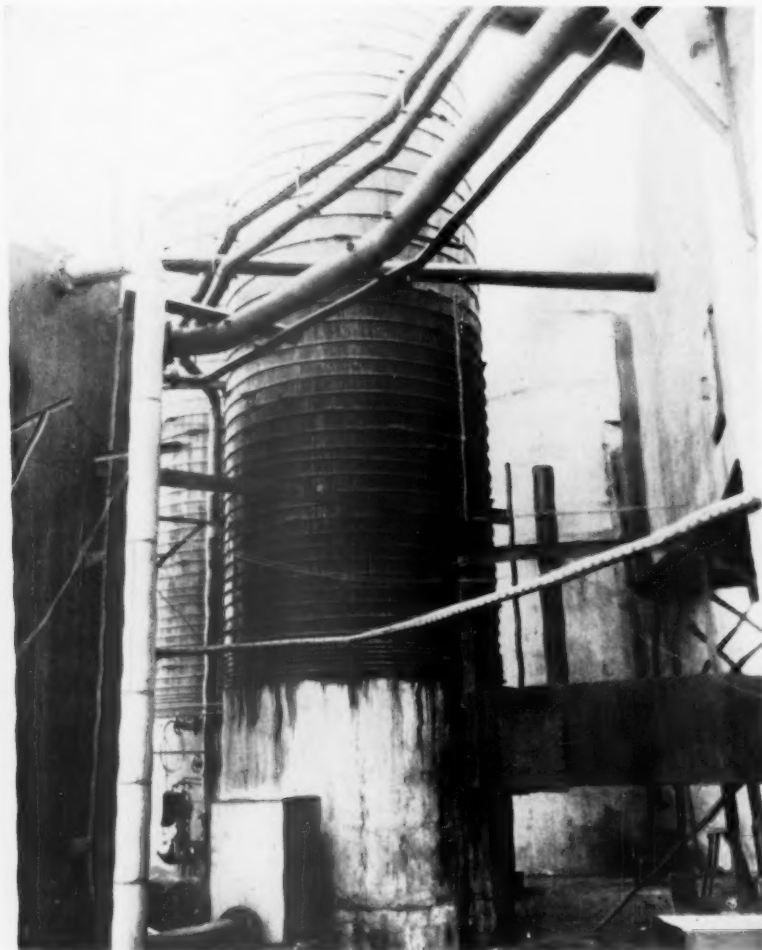
BERGSTROM TOWER

REMOVAL OF EFFLUENT TOXIC COMPOUNDS

By D. E. Allen

Project Chemist, Pulp Div., Weyerhaeuser Timber Co., Springfield, Ore.

PHOTO OF BERGSTROM TOWER INSTALLATION AT SPRINGFIELD



MAY SET UP NEW STANDARDS FOR SPREAD OF INDUSTRY

Here is the first published description of a new Bergstrom Tower installation for the removal of harmful compounds, as far as fish are concerned, from kraft mill effluent, written exclusively for PULP & PAPER.

The installation has been successfully operating at the over one-year-old Springfield, Ore., kraft mill of the Weyerhaeuser Timber Co. It is the first installation in the U. S. Another similar installation has just started up in the new kraft pulp and board mill of Potlatch Forests Inc., on the Clearwater River at Lewiston, Idaho—the first chemical pulp mill ever built in any of the Rocky Mountain or West Central Plains states.

The steps described in this article for reducing kraft mill pollution—note that there are others mentioned here besides the Bergstrom tower—may set new standards enabling the expansion of the pulp and paper industry into vast interior regions. The Potlatch mill is in a group of 15 of the largest states of the nation where there never has been a chemical pulp mill built—within the borders of the Pacific Coast states, Texas, Arkansas, the Mississippi River and Minnesota. There are vast stands of forests in this area which the U. S. Forest Service is anxious to turn to pulp production.

While many kraft mills have faced no serious problems in disposing of their waste liquors to public waters because sufficient volumes of flow existed to provide adequate dilution, there are some locations in which the effect of kraft mill wastes on aquatic life has raised the questions. When the Pulp Division of the Weyerhaeuser Timber Co. planned a new kraft pulp and paperboard mill at Springfield, Ore., where it would be necessary to discharge the waste into a clean fishing stream (McKenzie River), attention was given to every method of treatment that might insure there would be no damage to the existing conditions of the stream. This paper describes one of the principal steps taken toward this objective, i.e., the treatment of condensates to remove toxic sulfur compounds. Dr. Willis Van Horn, Research Associate at The Institute of Paper Chemistry, has lent considerable assistance in planning and following the operations of the processes designed to reduce the concentration of toxic material.

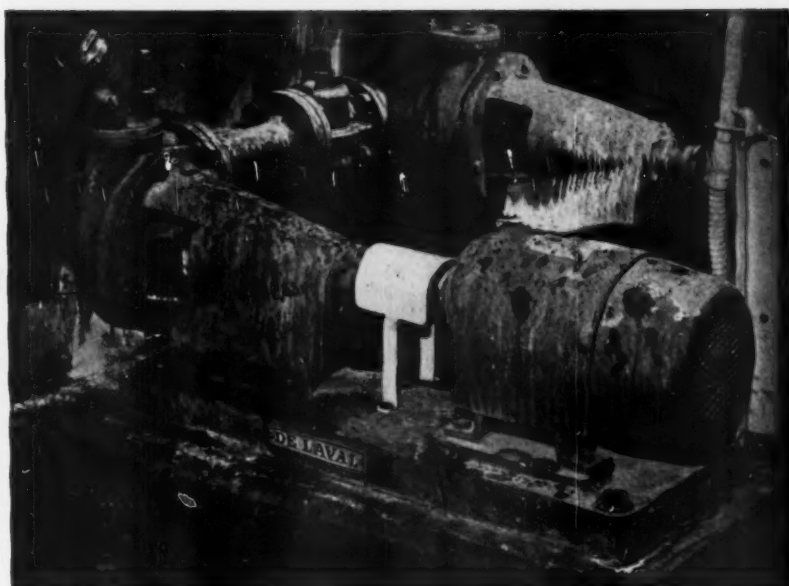
Some kraft mills in Virginia (1) have felt that their main pollution problem has been one primarily of B.O.D., and they have constructed lagoons to remove substantially all settleable solids, while reducing the color, B.O.D., and total solids through biological action to a point where they can be assimilated during normal river flows. However, B.O.D. is not the whole problem. Until recently, little study had been spent on the nature of kraft waste liquors and their effects on fish life. However, in 1947 Van Horn, Anderson, and Katz (2) at The Institute of Paper Chemistry made a study of the toxic substances which may be found in kraft pulp mill waste waters. They determined that the sulfides, mercaptans, resin acid soaps, and sodium hydroxide constitute the greatest hazard. They also established the following minimum lethal concentrations of these and other materials to minnows: (1) sodium hydroxide—100 ppm.; (2) sulfide—1.2 ppm.; (3) methyl mercaptan—0.5 ppm.; and (4) resin acid soap—1.0 ppm.

These toxic compounds will continue to exist in kraft effluents, but their concentrations can be reduced below the dangerous limit as demonstrated at Springfield. This mill was designed to keep the concentration of these toxic materials (as well as oxygen-consuming substances)

(1) Passler, A. H., and Hedgepeth, L. L., "Stream Pollution from Pulp Mills in Virginia," *Tappi*, Vol. 32, No. 12, pp. 559-562 (Dec. 1949).

(2) Van Horn, W. M., Anderson, J. R., and Katz, Max, "The Effect of Kraft Pulp Mill Wastes on Fish Life," *Tappi*, Vol. 33, No. 5, pp. 209-212 (May 1950).

*Here's the
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pump*



Your Maintenance Man Would Pick

The new De Laval CP Process Pump is designed to require as little service as possible and to make that servicing as easy as possible. For instance:

1. **PARTS ARE STANDARDIZED** Two different sizes of shafts, bearings, bearing cartridges, and pedestals fit the entire line of seven pumps.
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For complete information, capacities and dimensions, send for Bulletin 1125.



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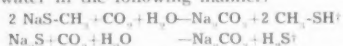
TURBINES • HELICAL GEARS • CENTRIFUGAL BLOWERS AND COMPRESSORS
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CPP-2

as low as possible. As the McKenzie River has long been known as a good fishing stream, it was doubly necessary to guard against any form of pollution dangerous to fish life.

As mentioned above, sulfides and mercaptans are among the most harmful compounds as far as fish are concerned. A Bergstrom tower (first of its kind in the U. S. and licensed under U. S. Patent No. 2,282,112) was constructed at Springfield to remove a large portion of these toxic sulfides and mercaptans and thus prevent their discharge into the McKenzie River. This stripping column (see sketch) consists simply of a wood stave tank 10 feet ID and 28 feet high packed with 4 in. x 4 in. cross-partition tile rings. The contaminated water is sprayed over the rings from the top, and hot furnace gases are introduced at the bottom. Although a small amount of H_2S and mercaptan may be volatilized and removed by many gaseous fluids, we feel that the large quantities of CO_2 in the recovery furnace gases release the major portions of the sulfides and mercaptans from the contaminated water in the following manner:



The CO_2 in this instance, lowers the pH and combines with the sodium ions to form the carbonate and bicarbonate.

This contaminated water comes from three sources in the kraft mill: Evaporator condensate; blow steam condensate from the accumulator; and digester top relief condensate which has first been run through a turpentine decanter. Evaporator condensate comprises the greatest portion of the "dirty water." Concentrations of sulfides and mercaptans are constantly varying between a trace and 100 ppm. of sulfides from the fifth effect condensate, and a recent average shows 32.3 ppm. sulfides and 16.4 ppm. mercaptans. The blow steam condensate from the accumulator recently has contained an average of 22.7 ppm. sulfides and 37.3 ppm. mercaptans—the highest values from samples taken immediately after a blow. The decanter effluent is negligible.

To check the efficiency of the Bergstrom tower in removing the toxic sulfides and mercaptans, grab samples of the influent and effluent were tested each shift for several months. The results were gratifying.

However, the Bergstrom tower was not the only improvement in the design of the Springfield mill as far as pollution was concerned. A four-stage washing system has given such complete washing as to cut the soda loss to only one to three pounds per ton A.D. pulp. Provision is made to return any pulp or filtrate spills in the washroom to the system. The floor drainings from the digester building and liquor room, as well as the discharge of green liquor dregs, are carried to an outside solar pond to avoid their addition in high concentration to the river. Fiber loss from the board mill has been reduced to an average of only 0.11 pounds per 1000 gallons of excess white water by a Sween

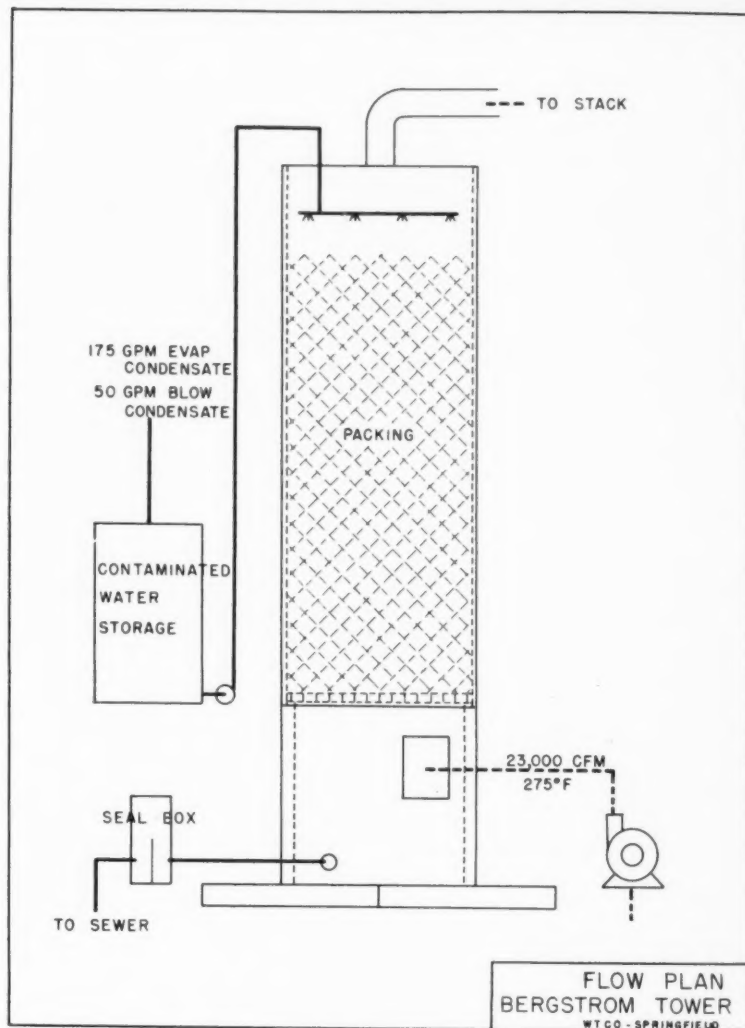


TABLE I—BERGSTROM TOWER EFFICIENCY

	SULFIDES			MERCAPTANS		
	In	Out	% Eff.	In	Out	% Eff.
April, 1950	51.8	8.1	84.4	19.9	5.8	70.9
May	26.6	6.2	76.7	20.5	6.0	70.7
August	30.8	5.4	82.5	11.6	4.9	57.8
Sept.	27.5	5.3	80.7	12.5	5.2	58.4
Oct.	33.2	5.2	84.3	17.9	7.2	59.8

Pedersen saveall.

A survey was instituted to ascertain the quantities of toxic compounds which were in the combined sewer effluent for all of the mill. Tests were made daily on grab

samples for sulfides, mercaptans, resin acid soaps, active alkali, pH, and B.O.D. in this waste water. The following table shows the results of a typical week's tests:

TABLE II—CHEMICAL CONCENTRATIONS IN SEWER

	9-15	9-16	9-17	9-18	9-19	9-20	9-21	Arg.
Sewer Flow—M/GPD	4.62	5.06	5.12	4.95	5.11	4.96	4.73	4.93
D.O.—ppm	0.75	0.00	1.90	1.90	3.45	4.55	0.40	1.85
B.O.D.—ppm	180	475	160	185	190	90	195	211
LaMotte Total S—ppm	0.4	1.1	0.6	0.7	0.4	0.2	0.4	0.54
Sulfides—ppm	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.07
—after 24 hrs.	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.03
Mercaptans—ppm	4.1	3.4	5.8	5.8	4.1	3.4	3.4	4.29
—after 24 hrs.	1.7	1.0	2.4	1.0	1.4	1.0	1.0	1.42
Resin Acid Soap—ppm	3.0	18.0	3.0	3.0	1.6	2.0	2.0	4.66
Active Alkali—ppm	36.0	34.8	12.8	0.0	7.6	9.6	14.8	16.51
pH	9.95	9.80	9.30	7.60	8.90	9.25	9.35	9.16

Note: Tests on toxic compounds were made using procedures detailed in Technical Bulletin No. 11 of the National Council for Stream Improvement, "Methods for the Detection and Measurement of Toxic Components of Kraft Pulp Mill Wastes."

Even though these tests were made at the low-water period, the river volume varied from 235 to 265 times the volume of the sewer flow from the mill. Thus, with a dilution ratio of approximately 250 to 1 it is readily apparent that immediate dilution with the swiftly flowing McKenzie River lowers toxic concentrations far below the minimum lethal concentration mentioned previously in this report. The ultimate dilution is such that none of the

tests are sufficiently sensitive to detect any of the above chemicals in the river.

For the past two summers during the period of low-water flow tests for dissolved oxygen and B.O.D. have regularly been made on the McKenzie River above (Hayden Bridge), just below, and six miles below (Coburg Bridge) the sewer outlet. These averages are given in the following table:

TABLE III—McKENZIE RIVER DO AND BOD AVERAGES

	Coburg Bridge		250' Below Sewer		Hayden Bridge	
	DO	BOD	DO	BOD	DO	BOD
Aug., 1949	9.92	0.48	10.15	1.42	10.34	0.57
Sept.	10.00	0.71	10.02	1.56	10.33	0.63
Oct.	11.22	1.10	11.22	1.93	11.40	1.21
Aug., 1950	9.46	1.13	9.62	2.54	9.88	1.10
Sept.	9.79	1.02	10.02	2.18	10.46	0.87
Oct.	10.31	1.08	10.50	2.19	10.83	0.95

As shown above, B.O.D. has never been a problem in Springfield as it has been in other kraft mills. This has been due largely to the fact that design improvements were incorporated with minimum pollution to be a vital factor in operation. It is interesting to note that, while the B.O.D. of the river 250 feet below the sewer outlet and before thorough mixing of the waste shows an increase in B.O.D. of only 1 to 1½ parts per million, it is impossible to detect any increase in B.O.D. by the time the waste water has become

completely mixed with the river.

The Weyerhaeuser Timber Co.'s decision to build a new kraft board mill on the McKenzie River at Springfield was made with the belief that this stream would not be harmed. Modern equipment such as a four-stage washing system and the unique Bergstrom tower have reduced the concentrations of toxic and oxygen-consuming materials in the mill effluent to such a point that even the lowest river dilution precludes any harm to fish life.



News About Industry People From Coast to Coast

SIDNEY M. PHELAN, JR., Old Wire Mill Road, Stamford, Conn., senior vice president of West Virginia Pulp & Paper Co., died recently at the age of 64. A native of Vicksburg, Miss., veteran of World War I, a member of WPB and OPA in the last war, he had been in the paper industry 41 years.

Succeeding to the vice presidency left vacant by Mr. Phelan is **WILEY LEROY JENNINGS**, sales manager. He is a native of Rocky Point, Va., associated with the organization since graduation from Virginia Polytechnic Institute in 1934. After ten years at Covington where he became paper mill superintendent he transferred to company headquarters at 230 Park Ave., New York, in 1945 as sales manager.

F. J. SENSENBRENNER, former president and board chairman of Kimberly-Clark Corp., celebrated his 94th birthday on Dec. 23 with his children and grandchildren at the Tamagami estate near Neenah, Wis. Completely recovered from an operation a year ago, he said he has worked some days from 8:30 a.m. to 10:30 p.m. and still can enjoy Bismark herring and onions, spareribs and sauerkraut and Liederkantz cheese at the same meal. He is chairman of the U. of Wisconsin regents. He started with K-C as a \$16 a week bookkeeper.

S. H. POPOVICH has been appointed Director of Quality Control at the Mi-quon, Pa., mill of W. C. Hamilton & Sons, according to recent announcement by H. H. Hanson, president. Mr. Popovich, a graduate of the New York State College of Forestry, served in the Army during the last war.

C. W. E. LOCKE, for several years resident manager of Pacific Mills, Ltd., at Ocean Falls, B. C., has joined Bloedel, Stewart & Welch, Ltd., which operates a 200-ton unbleached kraft mill and sawmills at Port Alberni, Vancouver Island.

LAWRENCE V. FRISCH, 42, for the past three years manager of Fir-Tex Insulating Board Co., St. Helens, Ore., died Dec. 5 at a Portland, Ore., hospital. He was born at Bonners Ferry, Ida., and graduated from University of Idaho in 1936 as mechanical engineer. He was a Major in World War II on General Patton's staff in Europe and Africa.

ISIDOR BAUM, principal owner of New York and New England mills headed by Ashland Paper Mills, is new president of A. P. W. Products Co., Albany, N. Y., producer of toilet tissue and other sanitary products. His election followed his acquisition of a controlling interest, which included substantial holdings by Roger Babson. Headquarters of Baum mills are in the Daily News Bldg., New York.

E. W. TINKER, executive-secretary of the American Pulp and Paper Association, was made an honorary vice president of the American Forestry Association at its meeting recently at Eagle River, Wis. Mr. Tinker is a former member of the U. S. Forest Service.

U. S. Mills Tour Causes Communist Loss in Italy



WEST LINN, ORE., Crown Zellerbach Corp. employees receive pins from J. D. Zellerbach (center), President. **Walter W. Wood** (left), woodmill employee, received 40-year pin; **William J. Carden** (right) retired yard leadman, and **John Bolle** (seated), machinetender on No. 9, awarded 45-year pins.

J. D. Zellerbach, president of Crown Zellerbach Corp., presented service pins to 129 employees of the C-Z West Linn, Ore., plant and to 38 at the Lebanon, Ore., mill, at dinners in December. He told the group about some European misapprehension concerning the American working conditions. While E.C.A. mission chief in Italy for two years, he met up with many such fallacies and was accused of chaining employees to the machines. Subsequently a labor delegation from Italy visited plants and workmen's homes in America. Because of this visit and the resultant reports of the representatives, 40% of members of the Communist-dominated Italian union broke away and established their own labor group, he said.

At West Linn were two 45-year-men—**John Bolle**, No. 9 machinetender, and **William J. Carden**, leadman of yard department, who retired Dec. 1.

Malcolm J. Otis, resident manager at West Linn, received his 30-year pin, and **Raymond A. Dupuis**, assistant resident manager, was presented with a 20-year pin.

At Lebanon six received 30-year pins. **Herb Wymore**, resident manager, presided.

RAY ONKELS, retired ex-general superintendent of the Westminster Paper Co., New Westminster, B. C., and brother of Peter J. Onkels, general manager and purchasing agent of the Pacific Coast Paper Mills of Washington, in Bellingham, had a big holiday season—he raises turkeys on his farm, which is just across the international border at Blaine, Wash., on the Canadian side.

J. GORDON McKAY has been appointed supervisor of the coarse paper subsidiary trading branches of Canada Paper Co., Montreal and Toronto, taking the place of the late J. B. LARKIN.

O. D. HALLIN, vice president of Pacific Mills, Ltd., presided at the annual Christmas dinner dance given by the company at Vancouver Hotel, Dec. 21, and Vice President J. A. Young presented service pins to some 50 employees in the absence, due to illness, of President Paul E. Cooper. Twenty-five-year awards were given to **Rajmund A. Dyrsmid**, **Quentin A. Leitch**, **Andrew A. McLennan** and **Carman Mills**.

MACHINE TENDER Munchausen Stories

We have a prize-winning logging story—instead of a mill story—this month for our Machinetender Munchausen column.

The author of this story is C. A. "Andy" Anderson (show in picture) wood technologist for the Crown Zellerbach Corp., mill at Camas, Wash. Mr. Anderson's original story wins for him our honorarium of \$5 for having it accepted and published. You, too, can win the prize by simply sending us an amusing story about a mill or any other operation pertaining to pulp and paper making. Any mill man, woodsman, or supply or equipment salesman is eligible to contribute a story. Of course, it doesn't need to have the remotest connection with reality.

Try your story-telling talent out on us. Send your contribution to Machinetender Munchausen, PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

Mr. Anderson doesn't have to take a back seat to any Paul Bunyan story teller, in our opinion. We think you will agree when you read his contribution, which follows:

A Famous Logging Show

"Many years ago I had the opportunity of accompanying a wood buyer into the backwoods area of Idaho looking for Pole trees to use in the rapidly expanding west, to string up telephone and electric power transmission lines. We wandered around the central part of Idaho for weeks without finding anything that looked like good Pole stock. We finally worked our way over into the headwaters of the Boise River. It was here that we struck a bonanza (that's Spanish for the Irish term 'helluva lot,' which in English means

'large amount'). Every hill was covered with trees that were tall, straight, and an exact diameter of 24 inches BDH—perfect Pole stock.

"We looked over the area, made contour maps, marked possible settings, and surveyed possible transportation routes out of this primitive country.

"It so happened that the only way out of this bountiful 'Pole Farm' was by way of the Boise River. With all of our information complete we swam 60 or 70 miles down the river to Boise, Idaho, to get the logging equipment ready and arrange transportation into the rich Pole farm.

"As soon as the news spread that the watershed area of the Boise Valley was going to be logged off, things began happening. We were heckled, jeered, threatened, and were on the receiving end of other assorted deeds of encouragement, but we went ahead anyway. The stuff was loaded onto large sleds. Pulled by large tractors, it was headed out to the Pole farm. We knew there would be some trouble on the way, but since the tractors were large, tank-like, 40-ton contraptions, we figured they would make it.

"Well, after sending out about 3000 tractor sled loads of equipment (this was to be a fairly large operation) without getting any poles, it seemed to be advisable to do some investigating. We started walking up the river, travelling at night, of course, and after about 45 miles we crawled over a mountain, looked down into the river valley and just about had apoplexy.

"Those doggone natives had hijacked all of our equipment, dumped it into the river, and when we got there, were pouring concrete over it as fast as they could work. This created quite a large dam and blocked the only route out of the Pole farm area. The dam was later called Arrow Rock. Thus ended one of the largest logging operations in the world, without a log being cut."



FRANK HUTTON (left) has been promoted to Executive Assistant in Babcock & Wilcox Co., New York—and is in charge of application and sales of heat and chemical recovery equipment, digesters, alloy castings, and other process equipment for the pulp and paper industry. In addition, he will direct sales of process equipment and alloy castings generally, of pulverizers for special applications. Mr. Hutton returned from Washington where he was Special Advisor on Power Problems for Mobilization. He joined B&W in 1927 after graduation from Washington University. After experience at several locations he was loaned to the government during World War II; returned to B&W five years ago.

ALLEN W. BETZ (right), well known among suppliers of the Southern mills, has opened his own business in New Orleans as Betz Engineering Sales Co., at 1225 Magazine Street, Zone 13 (P. O. Box 361). He will specialize in the pulp and paper and sugar mill mechanical equipment. A 1937 graduate in chemistry from Tulane, Mr. Betz was with Barrada & Page, Inc., Kansas City, two years in water treatment field. He was then with Gulf Engineering Co., New Orleans many years. Mr. Betz will serve mills in Arkansas, Mississippi, South Alabama, and west Florida.



J. HARLAN (PETE) HEUER (left), whose appointment as Gen. Mgr. and Asst. to Pres., A. P. W. Products Co., Inc., of Albany, N. Y., was reported in our last issue. This mill makes 165 tons daily of toilet tissue and towel on two Fourdrinier and seven cylinder machines, nine machines, two of which are Fourdriniers. Mr. Heuer was formerly Technical Director for St. Regis.

HERMAN N. SIMPSON (right), who has opened his own office as Consulting Engineer in the Central Building, Seattle. He was formerly Vice Pres. of Cellulose Engineers and prior to that was Resident Manager of the Sorg Pulp Co., Port Mellon, B. C., and Res. Mgr., Crown Zellerbach, Port Townsend, Wash.

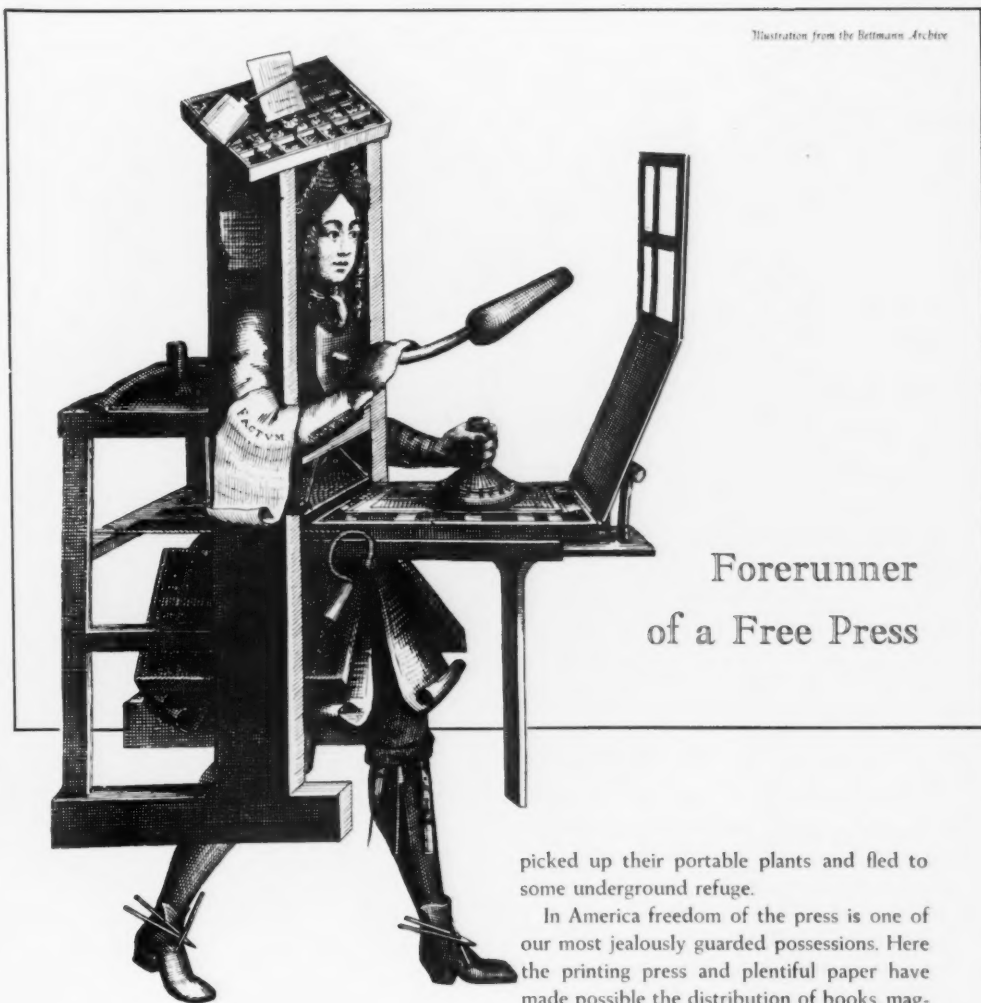
Neenah's Mayor Is 40-Year Man at Neenah Paper Co.

Carl E. Loehning, a 40-year veteran in employment of Neenah Paper Co., is the mayor of Neenah, Wis. He and four other 40-year employees—Bernard Dahms, Antone Handler, Edward Klawitter and Roy Zehner—received savings bonds in a recent company ceremonial, from President D. K. Brown. I. J. Stafford, director of mill operations, and Leo Schubart, secretary-treasurer, also were speakers.



NEW OFFICERS OF THE PAPER MILL MEN'S CLUB OF SOUTHERN CALIFORNIA were elected at a dinner meeting Dec. 8 at Fox Hills Country Club, Los Angeles. Left to right: ROLAND WOLF, Graham Paper Co., new President; L. A. GARDNER, Nekoosa-Edwards Paper Co., Vice Pres.; C. J. WARREN, Paper Container Mfg. Co., Secretary; J. C. FISHER, Sherman Paper Products, Treasurer; IRVIN E. DAMON, retiring President, who became a Director with J. Walter Genuit; Gerald A. Thiem, Gerald Madigan and Jack Leiser. Since 1935, this club has increased membership from 43 to 150.

Illustration from the Bettmann Archive



Forerunner of a Free Press

Always the printing press has been an instrument for protest against tyranny, though often it has had to operate in secret. During the French Revolution, printers set up their mobile presses in streets and alleys and turned out pamphlets until, discovered by gendarmes, they

picked up their portable plants and fled to some underground refuge.

In America freedom of the press is one of our most jealously guarded possessions. Here the printing press and plentiful paper have made possible the distribution of books, magazines and newspapers to all the people at little cost. Knowledge, culture and entertainment, spread without restriction, have helped to make and keep this a nation of free people with the highest standard of living in the world. Supplying this free press with its basic product—paper—is one of the great achievements of the American pulp and paper industry.

The dramatic story of paper is told in the sound-and-color film, "Paper—Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

F. C. HUYCK & SONS • Kenwood Mills • RENSSELAER, N. Y.

Pacific Coast Representative: Pacific Coast Supply Co., Public Service Building, Portland, Ore.; 343 Sansome St., San Francisco, Calif.



HUYCK
Felts



MANAGERS OF SCOTT PAPER CO. plants (l. to r.): JOHN W. McNICHOL, appointed Plant Mgr. of big parent mill at Chester, Pa.; HENRY S. GODSHALL Jr., transferred from Sandusky to Empire, Ore., to fill the new position there of Resident Mgr.; RICHARD COFFMAN, who succeeded Mr. Godshall at Sandusky converting plant; and JESSE LEWIS, whose duties as Resident Manager at Anacortes, Wash., are enhanced under a new plan to operate the two Pacific Coast mills separately and not jointly, as in the past. C. WYLIE SMITH, for ten years Vice President of Coos Bay Pulp Corp., and General Mgr. in charge of the Anacortes and Empire mills, has resigned to enter lumber business in a Southern Oregon partnership which includes his brother, Willis.

SCOTT CHANGES ITS COAST POLICY

Appointment of three new managers of Scott Paper Co. plants and the creation of independent resident managerships in the two Pacific Coast pulp mills are announced by J. L. Ober, vice president in charge of manufacturing and president of the subsidiary Coos Bay Pulp Corp.

After a decade as vice president and general manager of Coos Bay Pulp Corp. and its two coast mills, C. Wylie Smith of Empire, Ore., has resigned to enter lumber business in Southern Oregon in a partnership which includes his brother, Willis. This development and the assignment of Paul Baldwin, former plant manager of the parent Chester, Pa., mill to full time as assistant to the general manager in charge of operations at all Scott mills brought about the managerial promotions and the new Far Western policy.

John W. McNichol, with Scott since 1939 and assistant manager at Chester for the past year, succeeded Mr. Baldwin.

Henry S. Godshall Jr., also with Scott since 1939 and manager through 1950 of the Cut-Rite Division converting plant at Sandusky, O., moves west to take over the newly created post of resident manager of the Empire pulp mill on Oregon's Coos Bay. He was formerly in engineering and cost accounting at Chester.

Richard Coffman, with Scott since 1938 and recently finishing superintendent at Chester, went to Sandusky as plant manager.

Under the new policy, Jesse Lewis, who has been resident manager at the Anacortes, Wash., pulp mill since Sept. 1949, and before that acting manager and superintendent, and Mr. Godshall will operate those mills as separate units. They had been under joint direction of Mr. Smith.

Mr. Smith and his brother will continue to supply the Empire mill with pulp logs from the Coos Head Lumber Co., which they have leased from Scott for years and they join in ownership of another sawmill, Wylie Smith, a native of Everett, Wash., and graduate of Washington State College, started his pulp industry career in the Anacortes mill when it was owned by Puget Sound Pulp & Timber Co., and became manager at Empire when it was owned by K. O. Foss in 1935. In 1940 both mills were acquired

by Scott and he was placed in charge of both. Mr. Ober and Vice Pres. Forrest W. Brainerd of Coos Bay Corp. are expected to continue frequent supervisory visits to the pulp mills.

G. N. "JERRY" MADIGAN has succeeded the late Russell F. Attridge, as manager of the paper department of Johnson, Carvell, Murphy, at Los Angeles. Jerry Madigan, former president, Paper Mill Men's Club of Southern California, has been in the company's paper division for the past 28 years.



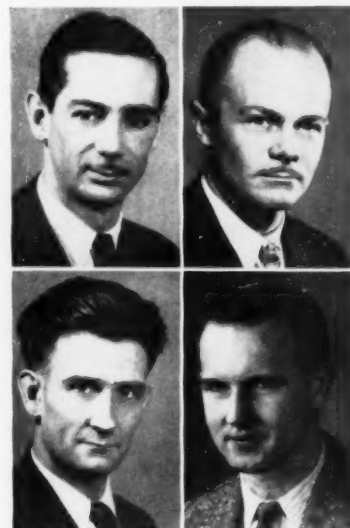
OWING TO A CHANGE IN PLANS announced in our last issue, ROBERT T. EDWARDS (left), has been promoted to Resident Manager of Pacific Mills Ltd., Ocean Falls, and TOM HARGREAVES (right) has been appointed Resident Manager of the new Elk Falls Co. Ltd., newsprint mill being built at Duncan Bay, B. C., by Crown Zellerbach and Canadian Western Lumber Co. Mr. Edwards had been appointed Manager for Elk Falls last September. He was Asst. Mgr. at Pacific Mills. Mr. Hargreaves, former Asst. Mgr. at Crown's Port Angeles newsprint mill, was named Elk Falls Project Engineer. Departure of C. W. E. Locke from Pacific Mills, where he was Mgr., changed the plans. Mr. Locke will continue in the pulp and paper industry.

OTHER PROMOTIONS AT PACIFIC MILLS (l. to r.): ROY R. FERGUSON, to Assistant Mgr.; F. O. BOYLOM, also Asst. Mgr. by previous promotion; ROBLEY A. BUTLER, to Assistant to Management from Tech. Supervisor, succeeding Mr. Ferguson.



DENNIS E. COUSINS (left), Mill Manager, Mobile, Ala., Hollingsworth & Whitney Co., has been elected Vice President of the Boston company which has operations in Maine and Alabama, according to President James Madden. As their top executive in the kraft field, he formerly headed operations in a kraft mill in Tacoma, Wash.

L. W. HEARD (right), who was General Superintendent of Ontonagon Fibre Co. kraft pulp and board mill in Northern Michigan for 18 years (it is now a National Container mill), has joined Longview Fibre Co., Longview, Wash., as Technical Engineer, according to R. S. Wertheimer, Vice Pres. and Res. Mgr. Mr. Heard is assisting engineering for new No. 6 (Moore & White) Machine plant additions which Longfibre plans to start about March. Mr. Heard was at Ontonagon 25 years altogether and in Seattle, Wash., in general engineering since 1948. He lives at Blackstone Apts., Longview, Wash.; a son in Michigan.



POWELL RIVER CO., Powell River, B. C., promotions: DR. RALPH PATTERSON (top left), made Technical Director (was Chief Chemist); DON BLAKE (top right), made Project Engineer (was Asst. Mech. Supt.).

DR. JOHN KEAYS (lower left), made Director of Research; ROBERT HOGAN (lower right), made Asst. Mech. Supt.





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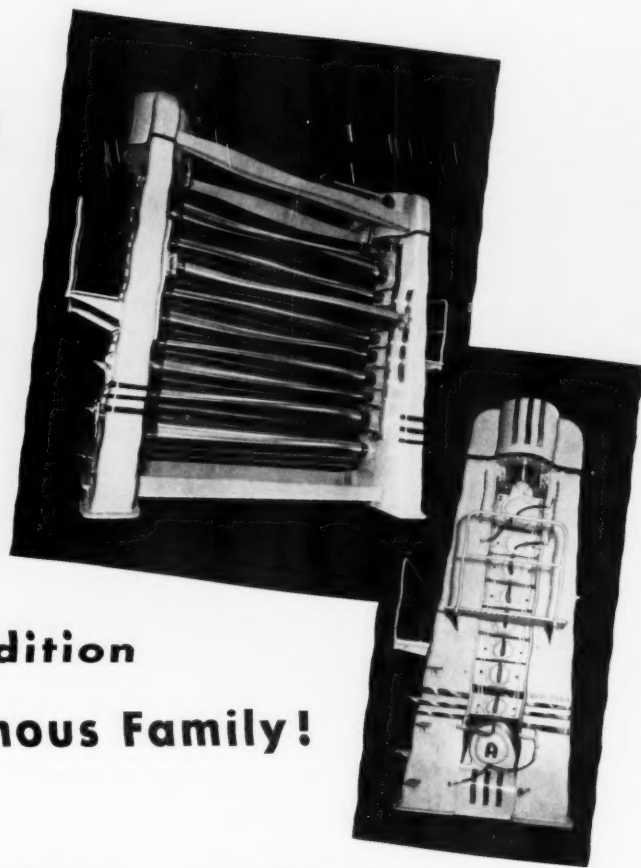


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This greatly improved Calender Stack fills an important spot in the manufacture of high-finish papers. Designed for modern high-speed, high-quality production, the new Appleton Machine Calender offers operating and construction features that you'll recognize as exclusively Appleton.

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minimum of operating space in the paper machine line. Of course, you'll recognize the sturdy, welded steel frame as being styled after the closely allied Appleton Supercalenders.

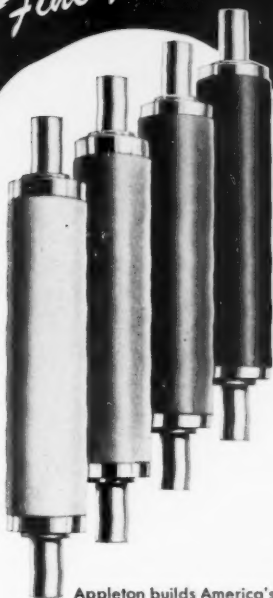
Appleton stands ready to apply the very latest engineering advancements and accumulated technical experience to solving your individual high-speed finishing problems. Invite us in, won't you?



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GOTTESMAN OCCUPIES ENTIRE FLOOR OF NEW SKYSCRAPER

BOARD ROOM of new centralized Gottesman & Co., Inc., offices at 100 Park Ave., New York, where the more than 60-year-old worldwide pulp and paper business occupies entire 35th floor of new air-conditioned, modern building on site of famous old Murray Hill Hotel.

Gottesman & Co. Serves \$5,000,000,000 Industry

Gottesman & Co., Inc., established in 1886, serves some of the foremost pulp and paper manufacturers in the world through its offices and direct agencies in important sections of North and South America and Europe. During its more than 60 years, efforts of the company have been directed solely toward service of the \$5,000,000,000 pulp and paper industry.

Of recent years in addition to its widespread commercial activities as sellers and distributors of woodpulp Gottesman & Company, Inc., has encouraged the production of this commodity by banking, finance and investment on a constantly growing scale. This latter activity has functioned through the resources of Gottesman & Co., Inc., and the Central National Corp., of which D. Samuel Gottesman is also president. Central National Corp. shares the new quarters at 100 Park Ave., as does Central National Corp. Commercial Division, which specializes in export of American and Canadian made papers.

President Gottesman came with the company 50 years ago and has been the directing spirit of the widespread organization since becoming president in 1919. Associated with him over 40 years have been Vice President Arthur J. Siegel and Secretary B. Emanuel and, for 35 years, First Vice President Samuel Dauman. In the 30-year class is Benjamin I. Sheldon, vice president and treasurer, and many other executives.

West Germany Plans International Exhibit

A great deal of interest is being aroused in the International Printing and Paper Exposition called "DRUPA" which is planned for May 26 to June 10 in Duesseldorf, Germany. As we reported last month this is Western Germany's attempt to revive the old democratic spirit of the historic printing and paper shows of Leipzig, now under Communist rule, but in the new setting of the Rhineland region.

The International Printing and Paper Exposition.

The longing of experts for a comprehensive show demonstrating the capacity of the graphic trade, the paper and pulp working industries, and all kindred trades is a very strong one in all economic branches which are concerned, says a publicity release from "DRUPA." All competent associations in the Federal Republic have already confirmed their readiness for cooperation and assistance, it says.

Federal Minister of Economics, Prof. Dr. Erhard, is sponsor of the Duesseldorf show.

Cochrane Acquires Plant

Cochrane Corp., Philadelphia, manufacturers of water conditioning equipment and steam power plant specialties, announces acquisition of Pottstown Metal products Co., Pottstown, Pa., which will be operated as an independent subsidiary. T. E. McBride, president of Cochrane, becomes president and treasurer of Pottstown Metal Products.

EASTERN SALES OFFICES OF THE DORR COMPANY, formerly at 570 Lexington Ave., New York, moved to the company's general office, Barry Place, Stamford, Conn. A branch office will continue at the New York address.

SUPERINTENDENTS' SYMPOSIUM USE OF DOUGLAS FIR



LES R. (Spud) HARTMAN (left), Maintenance Supt., Pulp Div., Weyerhaeuser Timber Co., Everett, Wash., who is now Chairman of Pacific Coast Division of American Pulp & Paper Mill Supts. Assn., and L. D. MCGLOTHLIN (right), Kraft Mill Supt., Crown Zellerbach, Camas, who concluded his term as Chairman at Longview in December.

The Pacific Coast kraft mills—six entire new mills built since World War II and others greatly enlarged—are now predicated primarily upon use of Douglas fir, “left-overs” of woods and sawmills as well as young second growth thinnings. And so, the Pacific Coast Superintendents Division decided it was time to take stock of their success with this relatively new species of wood for pulp and paper products.

Where fir is used, the products were declared superior but it raises new production problems and there is need for new and better equipment and construction materials for these mills.

The superintendents' round table discussion of Douglas fir was one of two high-lights of a meeting in Longview, Washington, in December. The other was Francis Flynn's report on efforts being made throughout the U. S. and Canada to solve the new problems of digester corrosion which have cropped up due to many changes in the kraft process (published in full in our January, 1950, issue, page 34). This report told how millions of dollars are being spent in plant-scale investigations of Inconel clad, stainless clad, improved carbon brick and stainless steel linings—running at \$20,000 to \$25,000 per digester—in the urgently-pressed campaign to find the answer. It was the first published report on experiences in mills in the South, East, West and Canada and what they are doing about it cooperatively.

The Douglas fir subject was fraught with almost as much urgency for finding successful ways of using it. “We live with it, and we have got to use it,” said one speaker. It was recalled how many experts a quarter century ago scoffed at Western hemlock as a pulp species, yet the

Pacific Coast mills eventually produced the highest qualities of white paper, alpha and purified pulps from it.

Some Fir-Paper Grades Superior

“We have already found in the mills that for certain grades of kraft paper, there is a definite advantage in using Douglas fir over other species, but our customers are not yet sold on what has been accomplished,” declared Gus Ostenson, manager of paper production at Crown Zellerbach's big Camas mill, where a second kraft mill and a multi-stage kraft bleach plant were among the most significant postwar additions.

William W. Clarke, paper mill superintendent, Longview Fibre Co., arranged the program at Longview and led the discussion on Douglas fir. In his summary, he said this species would be used 100% as furnish for his company's new No. 6 (Moore & White) machine. Construction is now well along and due to be completed this spring. It will make containerboard, multiwall bag stock and grocery bag.

A. C. McCorry, pulp superintendent, St. Regis Paper Co., Tacoma, reviewing the 15% use of Douglas fir in his company's operations (much lower than the average) drew these conclusions in comparing it with other western species: It is harder to bark, if old growth or dry, but second growth barks easily; it is harder on chipper discs knives; yield is about the same; mild steel digesters will not hold up as well; high vacuum on first and second stage washing is undesirable as it increases foaming; it is harder to screen and larger slot sizes are advisable; no difficulty in evaporators; recovery furnaces operate better—burn more readily and produce more heat value; more chlorine is needed in hypochlorite bleach stages; there is greater loss in Mullen through bleaching.

The Pusey & Jones 180-inch Fourdrinier paper machine, which was started up in Tacoma, January 5, 1949, has recently been making paper at 1,600 f.p.m., said Mr. McCorry, in describing the paper product as improved by 15% Douglas fir. It has better tear but lower Mullen and tensile strength than other West Coast wood. He believed the machine operation on fir is successful due to use of Bird Dirts.

A Superior Pulp from Longview

Svarre Hazelquist, technical director, Pulp Division, Weyerhaeuser Timber Co., Longview, Wash., told how his company's 1948-built market kraft pulp mill at Longview never uses lower than a 90% Douglas fir furnish but nevertheless produces a high quality bleach D. F. kraft of 85-87 brightness, intermediate in strength, which



FRANCIS FLYNN (left), Technical Assistant to Kraft Supt., Crown Zellerbach Corp., Camas, Wash., whose first published report on industry efforts to solve digester corrosion enigma featured our Jan. 1950 issue (page 34).

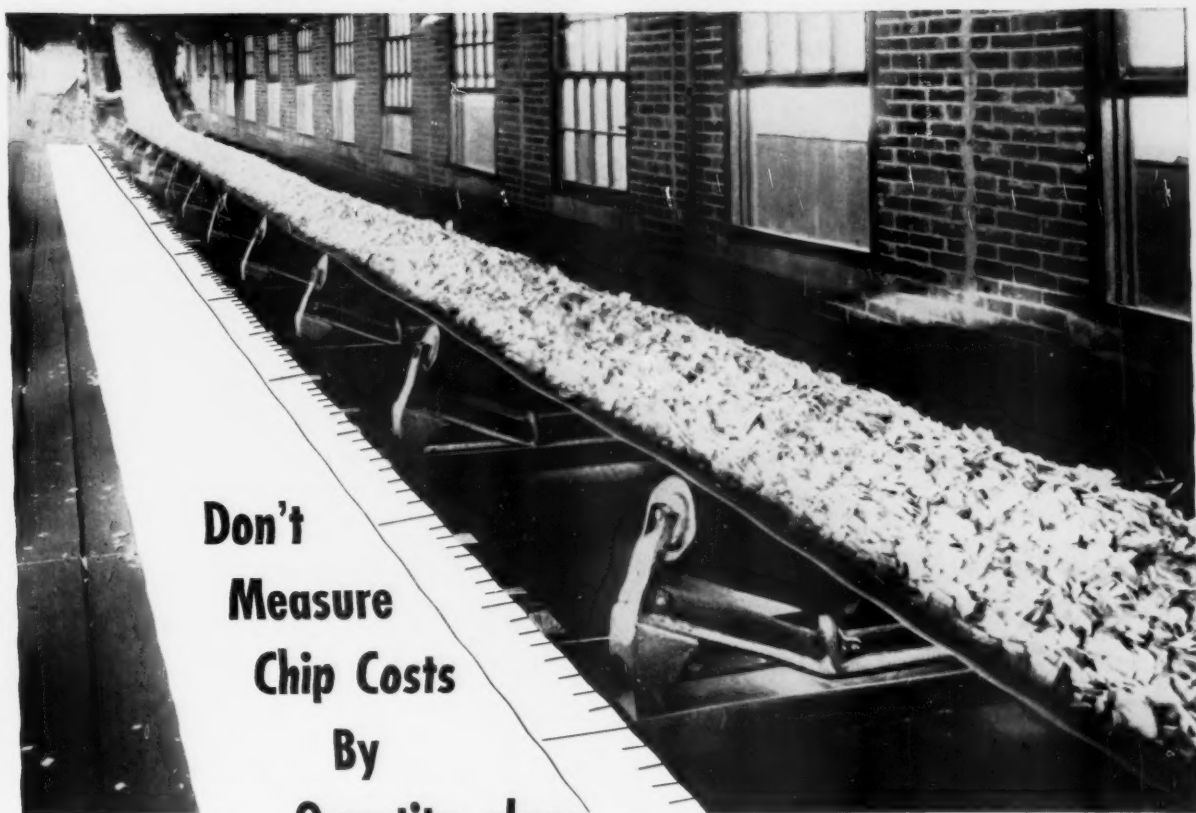
OTTO R. HARTWIG (right), General Safety Supervisor, Crown Zellerbach Corp. mills, and former Co-Chairman Pacific Coast Labor-Management Safety Conferences, was featured dinner speaker at Longview. His report on progress in safety was generally covered in our Jan. 1950 issue (page 62).

is interchangeable with its sulfite pulp in meeting customer requirements. A six-stage batch bleach plant processes the pulp. Drying is as easy, or easier, than with other wood, he said. Now that Weyerhaeuser has launched plans for an addition to the kraft mill at Longview—to make kraft board—it is adding 175 tons (of kraft production) upon the previous 200 tons of kraft and 265 tons of sulfite, and is still able to maintain its Longview woods operations on a sustained yield basis. These operations supply the sawmills and plywood plant at Longview, also.

Ray Brown, pulp mill superintendent, St. Helens Pulp & Paper Co., St. Helens, Ore., formerly of the Southern kraft industry, said St. Helens uses two digesters for 100% fir and two others for 100% hemlock. These are tumbling digesters. He said approximately 20% more chemicals are used for fir, but that the recovery burning results in a Babcock & Wilcox furnace are excellent.

Russell Graff, assistant pulp superintendent, Longview Fibre, reported on his company's use of Douglas fir in about every form from trim and leftovers from Long-Bell's adjacent sawmills to good fir logs. The company uses 71% fir (44% for board and 27% for paper) and 29% hemlock and other species (for paper). Comparing fir with hemlock, he said:

Old growth fir barks easier, young fir harder (in drum barkers); small logs are harder on chipper knives; fir must be cooked to 22 to 26 permagenate number for paper and 25-29 for board (hemlock for paper—also 25-29); more chemicals are required; there is more yield per digester; there are more foaming troubles; fir is twice as hard on digesters—one-



**Don't
Measure
Chip Costs
By
Quantity alone—**

**LOOK AT
QUALITY!**

Sure, chip volume is important in your mill's production. But chip *quality* can make or break the profit on that volume.

Oversize chips must be re-chipped—at extra cost. And, oversize chips are usually bruised chips. Even when re-chipped, they require stronger acids, higher pressures, longer cooking—at more cost. And the quality of the pulp still suffers—at the cost of user satisfaction.

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E. I. S. Chipper Knives

eighth inch corrosion rate per year compared to one-sixteenth; fir is worse for digester heater tubes; fir washes better; soap is not a problem comparable to the South's problem with pine; recovery burning is better.

Up to 75% Used for Kraft at Camas

Mr. Ostenson, the Camas mill's manager of paper manufacturing, said that his mill uses 75% fir on No. 2 grades of kraft and lesser amounts on other grades. The Camas mill in 1948 added a 165-ton bleached kraft pulp mill to its existing 185-ton unbleached kraft pulp mill.

The trend to creped kraft in the paper market, he predicted, would make it possible to use more Douglas fir as it has advantages for these grades and some others. A freer stock is made with fir, making possible faster machine speeds. Douglas fir is an excellent furnish, he said, for toweling, and is preferable wherever bulk or good tear is desired.

A. P. (Tony) Siebers, paper mill superintendent at Weyerhaeuser's one-year-old kraft board mill at Springfield, Ore., said the efforts to make a good kraft paperboard from Douglas fir sawmill waste presented a challenge to the paper industry machinery manufacturers for improved equipment all through the process. He said his mill uses only stainless steel tackle in refining. In the Springfield process pulp passes from Shartle No. 6 Hydrifiers to E. D. Jones & Sons Majestic jordsans to the large size Bird screens ahead of the Rice Barton Fourdrinier.

Mr. Clarke, the meeting chairman, wound up the discussion. He mentioned Longview Fibre Co.'s separation in four lines of screening and four divisions of storage for "board" fir, "paper" fir, hemlock for paper, and soft hemlock for bleached. He said lower powers were being used as a result of more fir use, the power use was still being cut down. He

Personals

News About Industry "Affiliates"

HARRY S. CUTLER, United Board & Carton Corp., Lockport, N. Y., chairman of the New York-Canadian Supts. Division, announces appointment of Gordon White of Syracuse, of the A. E. Staley Mfg. Co., as industrial affiliates representative.

JOHN G. BUCUS, general manager, Strapping Division, Acme Steel Co., Chicago, was elected president of the Materials Handling Institute for 1951 at its annual meeting in New York.

Lindsay Elects Officers

At a special meeting of the directors of The Lindsay Wire Weaving Co., Cleveland, Fred L. Crossman, formerly works manager, was elected president, succeeding his father, the late A. Fred Crossman. Robert H. Crossman was elected assistant treasurer.



OTHER COAST SUPTS. OFFICERS elected at Longview (l to r): A. C. McCORRY, First Vice Chairman (Pulp Supt., St. Regis, Tacoma); GUS OSTENSON, Second Vice Chairman (Mgr. of Paper Mfg., Crown Z, Camas); WILLIAM W. CLARKE, Third Vice Chairman (Paper Mills Supt., Longview Fibre Co.); FRED ARMERUSTER, Secy-Treas. (Dow Chemical Co., Seattle). The first three took part in Douglas Fir round table and Mr. Clarke was chairman of the meeting.



PARTICIPANTS IN DOUGLAS FIR symposium (l to r): RAY BROWN, Pulp Mill Supt., St. Helens Pulp & Paper Co., St. Helens, Ore.; A. P. (Tony) SIEBERS, Paper Mill Supt., Pulp Div., Weyerhaeuser Timber Co., Springfield, Ore.; SVARRE V. HAZELQUIST, Technical Director, Pulp Div., Weyerhaeuser, Longview, Wash., and RUSSELL GRAFF, Assistant Pulp Supt., Long View Fibre Co., Longview.

mentioned starch use as a "crutch" and some hemlock mixture when improvement was desired. Not more than 40% fir is used for gumming papers, he said, but some fir is used in all grades and will be 100% on the new No. 6 for containers and multiwall and grocery bag stock.

Conclusions were that the fir is harder to pulp, but gives better yields. One audience speaker said his mill "came out

about even," whether fir is cooked with other species or separately, and a technical man cautioned that there are really two quite different Douglas fir fibers—those in springwood and those in summerwood. Incidentally, the marked differences between heartwood and sapwood and old growth and second growth fir were reported in our Jan., 1950, issue (page 76).

RALPH J. CORDINER, a native of Walla Walla, Wash., became president of General Electric Co., Dec. 15, succeeding **CHARLES E. WILSON**, new Defense Mobilization chief. Mr. Cordiner has been with GE 24 years, in groundwork in Eastern Washington, the Pacific Northwest, and he has traveled almost constantly in a GE plane over the U. S. and Canada on duties as executive vice president. A graduate of Whitman College in 1926 he holds an honorary doctorate from there.

WILLIAM BROWN BELL, president of American Cyanamid Co., died late in December, in French Morocco on a business trip, at the age of 71. A native of Pennsylvania, he resided in New York and at Pocono Lake Preserve in his home state. A lifelong member of the Society of Friends, he graduated from Haverford and Columbia, was admitted to the bar in 1903. He became president of American Cyanamid in 1922, and his integration of the various companies which form it is recognized as a major achievement in U. S. management.

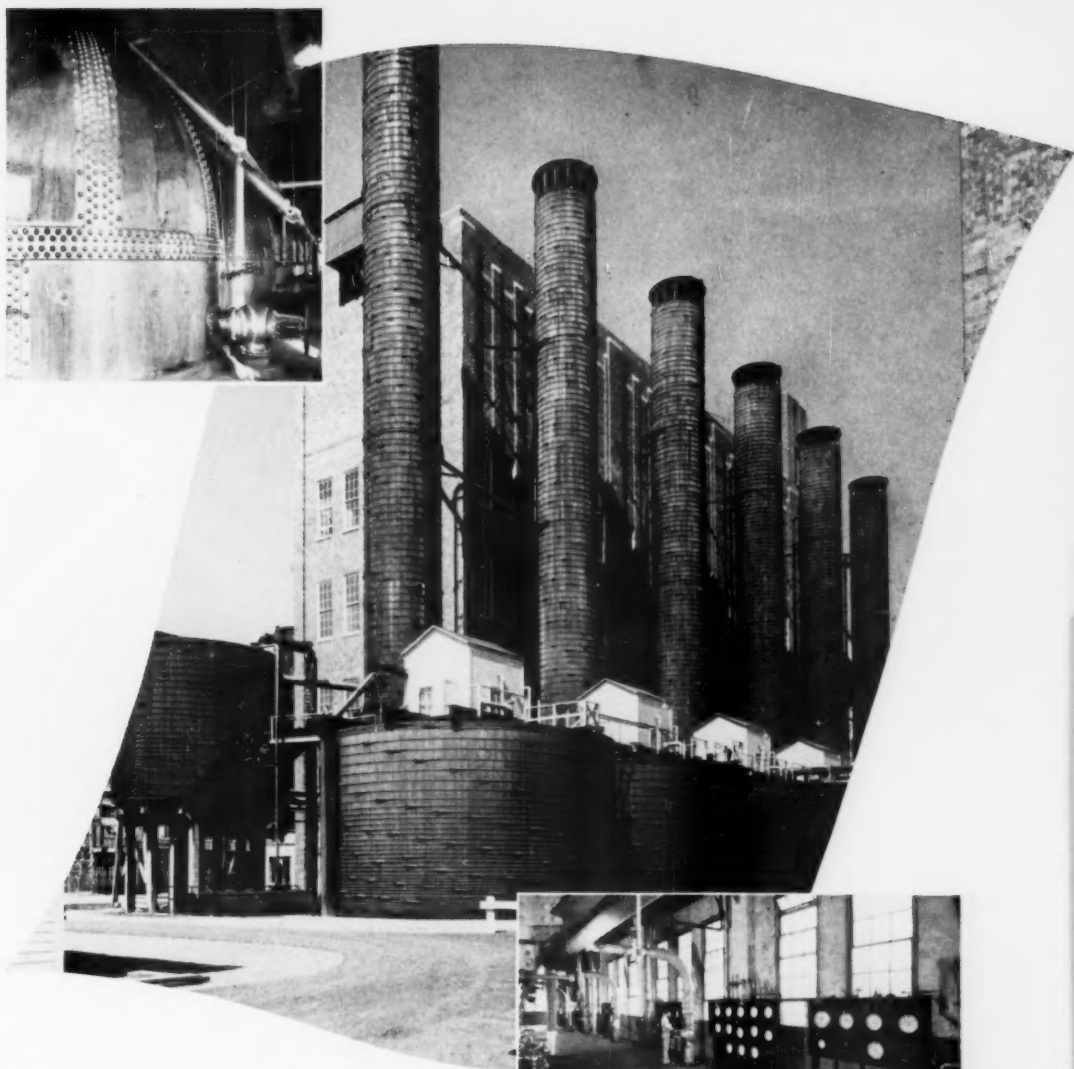
Now It's Halvar and Lennart Lundberg

Lennart Lundberg has joined the firm of his father, A. H. Lundberg, 308 Orpheum Bldg., Seattle 1, consulting chemical engineer and manufacturers' representative in the Pacific Northwest since 1915.

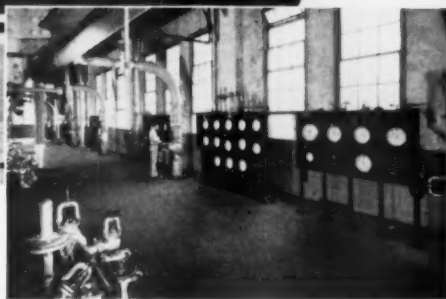
Lennart Lundberg graduated in chemical engineering from the University of Washington in 1945 and obtained his master's degree there in 1948, after serving as a junior grade lieutenant in the navy during the war, and for the past two years he has been on the staff of the new kraft mills of Weyerhaeuser Timber Co. in Longview, Wash., and Springfield, Ore.

The Lundberg firm represents G. D. Jenssen Co. Inc.; Sandy Hill; American Defibrator Co.; Nichols Engineering; Paper Machinery Ltd. and American Heat Reclaiming in Far West U. S. and Canada.

R. M. BROWN has resigned from Stadler, Hurter & Co., consulting engineers of New York and Montreal, to return to Bristol Co. He is now located at Baltimore, Md.



Blow pit stacks are a familiar sight on the skyline at Puget Pulp's Bellingham plant. Behind them is the digester building, where the chips are cooked in acid and steam to become pulp fibers and residual liquors. In this, the heart of the pulping process, control is in large measure automatic, insuring uniformity of the finished product.



PUGET SOUND
PULP & TIMBER COMPANY
BELLINGHAM • WASHINGTON

ESCO Appoints Latimer at Seattle



Wilson V. (Bill) Latimer (shown in picture), assistant manager the past few years of the Seattle branch of Electric Steel Foundry, has been promoted to the position of Seattle branch manager. Latimer will replace J. E. Mc-

Quaid who has been called into the home office at Portland, Ore.

Born in Kelso, Wash., Mr. Latimer attended the University of California, but returned to his home state to graduate from the University of Washington in Seattle. He was first employed by Electric Steel Foundry in 1942 when he joined the production control department at Portland. He held the position of manager of that department four years before going to Seattle in 1947 to serve as assistant manager.

The Seattle branch serves pulp and paper, logging and sawmill, and other industries in an area extending north to Canada, west to the Coast, east to the Cascade Mountains and south to include Lewis county.

Defeats CIO in Texas

After over 12 years of being represented by the Bookbinders, Mine Workers and CIO Paper Workers, employees of the Dallas, Tex., converting plant of Gaylord Container Corp. voted, 127 to 8, to join the AFL Pulp, Sulfite and Paper Mill Workers. This now makes the eighth Gaylord plant whose employees are represented by the AFL union.

K. O. ELDERKIN, paper mills manager, Crossett Industries, Crossett, Ark., was given a pair of red Stock Club suspenders recently at the annual dinner party in Crossett, where the paper salesmen, headed by N. T. Beardsley, pick up the check for the mill executive staff. It was announced the suspenders made K. O. a member of cafe society in either New York or Crossett.

D. C. ELLSWORTH, formerly of Lybrand, Ross Brothers & Montgomery, public accountant firm at Seattle, Wash., has become secretary of Oregon Pulp & Paper Co. and Columbia River Paper Mills, headquarters at Portland, Ore. Mr. Ellsworth was with the accounting firm 10 years, three years of which was spent in U.S. field artillery.

THREE WHO HAVE JOINED MORNINGSTAR, NICOL, Inc. starch and dextrine manufacturers, New York (l. to r.): JEROME P. STRASSER, Mgr. of Paper Dept.; JOHN BIRRELL, Technical Service; GUS A. SPORRE, Pacific Coast Representative.



STARCH FIRM APPOINTMENTS

Morningstar, Nicol, Inc., starch and dextrine manufacturers of New York City, announce appointment of Jerome P. Strasser as manager of its new paper department. He will have charge of product development and sales for the paper industry.

The company will market potato starch products produced at plants in Houlton

and Mars Hill, Maine, and Twin Falls, Idaho.

Strasser is one of three former Stein, Hall & Co. men who have joined Morningstar. Also in New York is John Birrell, in technical sales service.

On the Pacific Coast, Gus A. Sporre has become Morningstar representative, with headquarters in Vancouver, Wash.

DOAN VIEWS FARM FIBER FUTURE

Foster P. Doan, Jr., plant manager, Sandy Hill Iron & Brass Works, Hudson Falls, N. Y., recently addressed an Inter-American Press Conference in New York on the uses of residual agricultural materials for making paper. He cited important developments in the Middle West of the U.S., in Louisiana, in Latin American countries.

He said newsprint can, theoretically, be made with some residual fibrous materials, but not 100%. Though straw could substitute for some sulfite, as demonstrated by Ontario Paper Co. in a 1948 commercial run, he said it was not practical because of cost and remoteness of straw from the newsprint mills.

He summed up:

"The use of residual agricultural materials is not new, they were used before

wood pulp and their use is bound to increase for two reasons. First, because of the increased use of paper and board and second, because of the improved technical methods of harvesting, handling and processing. A wide variety of fine and coarse papers, boards and wallboards of good quality can be produced. In countries which do not have the proper species of wood but which have straw, bagasse or cotton stalks a sound industry can be built up. The mills now successfully operating prove this."

With demand for paper increasing and an estimated available world supply of 470,000,000 tons of straws, he said: "It is inevitable that more mills will be designed and built to use residual agricultural materials, but in order to insure their success, a careful cost study must be made."

NAVY DEVELOPS NEW FILTER PAPER

A glass fiber filter paper developed by Naval Research Laboratory is 5000 times more effective than present commercially available filters, contains no foreign imports, according to U. S. Department of Defense release.

Made of glass fibers 1/20th the thickness of a human hair, the paper is impervious to fungus, can be manufactured by any paper mill in the United States with a minimum of instruction. During National Bureau of Standards test runs, the paper was produced in 1/100th inch thickness at

28 feet per minute; full scale mill runs have also been made.

Thinner and capable of withstanding more intense heat than insulating papers now used in condensers, it will make for reduction in size of condensers used in electronic equipment; added industrial and military uses expected because of its electrical insulating properties.

Details are available on request to Technical News Letter, Room 2C-763, Pentagon, Washington, D. C. Telephone: Liberty 5-6700, ext. 52351 or 74362.

ROBERT AND COMPANY ASSOCIATES

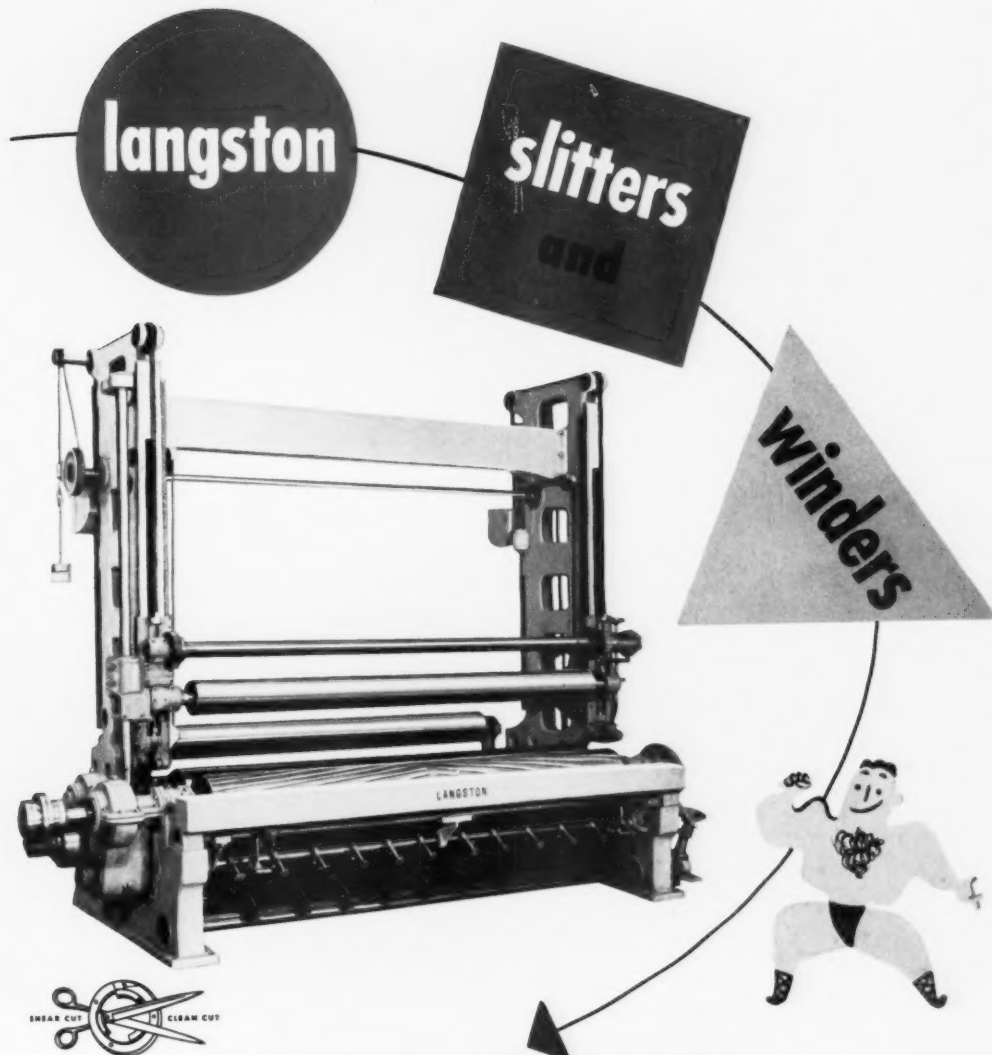
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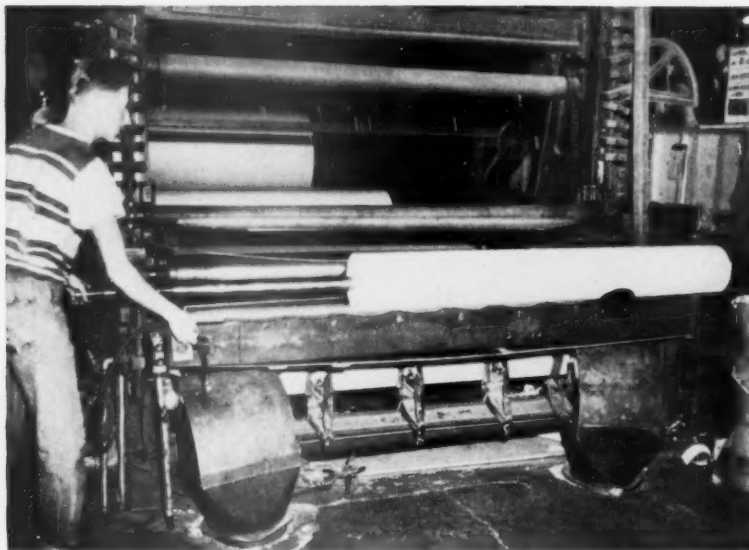
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SAMUEL M. LANGSTON COMPANY
CAMDEN, N.J.

AN EXPANSIBLE ROLL SHAFT



COUNTER ROLLS OF 40 LB. ALPINE MEAT WRAP moving horizontally off Collard's expansible rewind shaft behind No. 8 Machine's Cameron Rewinder at Crown Zellerbach Corp., Camas, Wash. A cleated belt takes rolls to finishing table. The operator reaches for compressed air line with right hand, ready to pneumatically re-expand the shaft as soon as rolls are cleared. This sequence of collapsing, unloading, and expanding the shaft consumes but about 3 seconds.

L. L. Collard, bag factory shop foreman, Crown Zellerbach Corp., Camas, Wash., after having recognized the need for improved paper roll shafts and feeling there were ways of overcoming functional disadvantages of the cam and spring type units, developed a pneumatically expanded shaft which appears to have overcome these deficiencies. His shaft, known as Collard's expansible shaft, was first placed in actual use in the Crown Zellerbach mill about 30 months ago. Now there are about 25 of these expansible shafts used at Camas.

These shafts have long rubber sacks running lengthwise along the center axis inside a longitudinally segmented steel jacket. Inflation of the pneumatic tubes expands the jacket to full diameter, holding it in this position until the sacks are deflated simply by turning a release valve. With release of the compressed air, the

diameter of the roll is reduced as the jacket segments return to normal retracted position.

The Collard shafts are now used at the Camas plant in finishing room, bag factory, on paper machines, and in printing department, as parent roll shaft on backstands or for rewind shafts.

Among the advantages of the pneumatically expansible shaft are instant expansion and collapse, positive positioning, even contact with jacket throughout full length of the paper roll, consistent elimination of delays from shaft adjustments, and speed with which shafts are changed.

Commenting on the Collard shaft, Gus Ostenson, manager of paper production at Camas, says the units' simple compressed-air feature brings the jacket to the exact diameter desired for use with or without a core. In either case the diameter is uniform across the full width

of the roll. Extreme hard usage of this equipment on winder operations has proven that these shafts hold true circumference and balance much better than the cam and spring type winder shaft, thus rendering considerable influence on the quality of the paper rolls produced.

For deflation, he continues, a slight twist of the release valve reduces the shaft diameter so it can be pulled freely from the rolls, or rolls pulled from the shaft. He says "this feature greatly simplifies and speeds up the operation."

When using two of these shafts as a pair for rewinding behind No. 8 machine at Camas, as shown in accompanying illustration, the roll-filled shaft is removed from winder drum and rolled free. The empty shaft is substituted, the paper started on it to form the next set of rolls, and then the operator's attention returns to the other shaft.

To remove the paper rolls, he collapses the expanded shaft, places the end of the shaft in a slot to engage the shaft collar for holding shaft in position, and then starts a cleated belt on which the shaft-mounted rolls have been positioned. These rolls slip from the shaft as they are carried away on the belt enroute to finishing table. Immediately after rolls clear the end of shaft, the operator re-expands the shaft by inflating the sacks with compressed air from a central distribution line. With pneumatically expansible shafts, this emptying and readying sequence requires approximately 3 seconds.

Mr. Collard has formed his own manufacturing firm—Collard Manufacturing Co.—for the manufacture of these shafts.

Many Employees Receive Bequests from Clark Estate

Twenty-five salaried employees of Riverside Paper Corp., Appleton, Wis., received bequests of from \$350 to \$1,350 each, half of them being \$650-\$750, from the estate of the late C. B. Clark, former president of Riverside and director of Kimberly-Clark Corp. Also his shares in those companies were divided among a large number of relatives and friends, but the largest share, to his widow, Mrs. Jessie Kerwin Clark. His estate was valued gross at \$4,890,520, before federal estate tax of \$605,341, and Wisconsin inheritance tax of \$401,833 paid by legatees.



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Josephine Van Dyke

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Every spool of wire that we draw must pass three physical tests:

1. SIZE—diameters are checked on a special micrometer that makes it possible for us to measure our wires to one ten-thousandth of an inch.

2. TENSILE—the breaking point of each spool of wire drawn is measured under a pulling load to assure uniform

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3. ELONGATION—this test determines whether the correct amount of "stretch" is in the wire—a vital factor in the life of the wire.

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A bright red shade direct orange that is equally at home on all fibers.

PHENO FAST ORANGE 2RS CONC. holds its clarity of tone in both pastel and deep shades.

An all-purpose dye, PHENO FAST ORANGE 2RS CONC. is outstanding in the number, variety and ease of applications possible through its desirable properties of excellent solubility, brightness of shade, good fastness to light, to bleeding and to paper chemicals, and good retention on the fibers.

We recommend PHENO FAST ORANGE 2RS CONC. for facial tissues, absorbent papers, bond, envelope, books, board, blotter, wrapping and many grades of specialty papers.

Call in your Calco representative for assistance with any problems regarding the coloring of papers.

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All across the North American continent, north to south and east to west, the industry is improving woodlands technics and introducing large scale conservation, reforestation and mechanization.

GREEN HARVEST AT LESS COST

Our Cover Picture

The photograph on our cover, among several exclusively obtained for PULP & PAPER in Northern Minnesota tree planting and cutting areas to illustrate this article, shows how an International tractor, with heavy duty middle-buster plow in front and planting machine in back, is operating over rough terrain. The picture was taken near Effie, Minn.

Mechanical planting now enables M & O to plant from 8,000 to 15,000 seedlings per day with only a crew of two men.

The planting machine shown on the cover and also discussed in this article is made by the Lowther Co., of Chicago. M & O has two of them. The International tractor is a T.D. 9 Model.

President Faegre Explains Mando's Forest Policy



Minnesota & Ontario Paper Co.'s forest management policy, as explained by its president, J. B. Faegre (shown in picture):

"While Mando owns a very small part of Minnesota's forest lands, we are striving—by careful utilization and by sound, long-term forest management practices—to make our forests permanently useful. Our goal is to harvest and re-harvest our forests in a manner that will maintain beauty and productivity. We believe this is both good business and good citizenship."

"Trees For Tomorrow" is not only a slogan but the backbone of a sound management policy of the Minnesota & Ontario Paper Co., of Minneapolis and International Falls, Minn., and its Canadian subsidiary, with mills in Kenora and Fort Frances, Ont. On company-owned timberland in northern Minnesota they have staked out more than two and one-half million trees since 1936. By 1960 they expect to start harvesting a crop of pulpwood from their first plantings of jack pine.

By Jack Rottier

Lake States District Mgr., American Forest Products Industries, Inc., Milwaukee, Wis.
Written especially for Pulp & Paper

During 1949, the company planted 750,000 seedlings on 467 acres of "cut-over" and "non-producing" lands. Plans for 1950 calls for the planting of at least 500,000 seedlings on 400 acres, or an average of 1250 trees per acre, and it is expected that future annual planting programs will be at least this large.

Although the first trees were planted by hand, a mechanical planter has been used since 1947, and these plantings have been highly successful. According to company figures, hand plantings back in 1936 cost \$20.97 per acre, or \$14.73 per thousand seedlings. In 1949, even though wages and stock prices were higher, this figure was reduced to \$16.23 per acre, or \$10.73 per thousand, by using the tree-planting machine. And, according to company officials, these costs probably can be reduced further.

Survival from mechanical plantings has



THIS SEEDLING WAS PLANTED in Northern Minnesota in Spring of 1949. Picture taken about a year later. It's a Norway pine. Note plowed lane for planting and sandy upland soil in which seedlings thrive.

been as high as that from hand planting. After a recent survey the company's forestry supervisor, F. T. Frederickson, reported:

"All plantations have been successful to date. Most trees are showing rapid growth and there has been only a minimum of loss."

Some of the lands planted by the company up to now have been fairly level, open jack pine plains, but not all trees in need of planting are as easily adaptable for this type of machine planting. Some area replanted during the past few years, and much area to be planted in the future, is fairly rough or rolling, with considerable concentrations of stumps, slash and brush. To overcome this company foresters found it necessary to modify and strengthen the planting machine.

Improvements on Tractor

They also worked out a mechanical method of making a lane for machines, encountering heavy concentrations of slash. This was accomplished by mounting a heavy middle-buster plow on the "A" frame of the tractor. A plate was fitted over the plow point, so the plow floated along the ground in front of the tractor, opening up a 6-foot lane through the slashings for the machine, which is towed behind. With the use of this equipment and two operators, one on the tractor and one on the tree-planting machine, from 8 to 15 thousand trees have been successfully planted in an 8-hour day. This may be compared with hand-planting, which averages about 500 trees per man-day.

A Lowther Planter Used

The planting machine used is made by Lowther Company, of Chicago. Forest Management Officer G. B. Amidon of M & O said, "we have two of these machines and find they are very satisfactory for our rough terrain though it was necessary to make a few changes."

The middle buster improvised at the front of the International T.D. 9 tractor

GANG BUSTER

for Pulp and Paper Mills

Savings Pile Up with LORAIN at Your Mill!

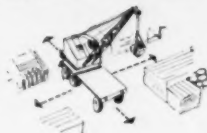


NEW YORK & PENNSYLVANIA CO.

This Lorain-TL Self-Propelled Crane at the Lock Haven, (Pa.) plant of New York & Pennsylvania Co., is a typical installation. The "TL" is equipped with grapple to transfer wood from piles to chipper cars; it moves readily from one end of their extensive yard to the other.

MOBILITY UNLIMITED . . .

A Lorain Rubber-Tire Crane can travel anywhere in your mill yard. Self-Propelled models have 4 speeds up to approximately 7 miles per hour.



DO ALL JOBS . . .

Equip your Lorain Crane with a sling, grab or grapple which ever is most suitable for your loading or unloading . . . also use it as a shovel or dragline to build roads, ponds, etc.



SAVES YARD SPACE . . .

Lorain Cranes pile up pulp in bigger piles . . . can reach out farther to pile or pick up pulpwood, saves valuable yard area.



Here's a quick answer to manpower shortage! It's a Lorain Self-Propelled Crane for pulpwood handling. These one-man operated cranes do the work of a gang of men . . . keep up with mill demands at reduced costs.

In addition to saving manpower, Lorain Cranes add many more advantages to pulpwood handling. They may be used with slings, pulpwood grabs or grapples to suit any size of wood and method of piling. Lorains can work around the clock — with the same efficiency that

never varies with the hour, season or weather.

Lorains protect manpower by reducing accidents—eliminate the hazard of dynamiting frozen wood and replace as many as twenty or thirty men on a slippery block pile.

Find out how a Lorain can solve your manpower problems today and step up pulpwood cordage every hour. Your Thew Lorain distributor has the answer!

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CRANES
for
PULPWOOD
HANDLING



YOUNG BOYS AND YOUNG TREES—When young BOB FREDERICKSON grows to manhood, these young trees will be ready for a harvest of pulpwood. With Bob is his father, F. T. FREDERICKSON, Forestry Supervisor for the M. & O. Paper Co. These trees (note they are touching two of them) were planted by machine in 1947. Photo for PULP & PAPER by Jack Rottier.

pushes away brush and windfalls, thus giving the driver more time to watch the planter. A change in planter operation was the use of skids, instead of wheels, for packing the trees when the wheels would plug with wet clay.

After a field trip, F. T. Frederickson, forester for M & O, reported: "The Lowther planter was found to be very sturdy and maneuverable and entirely satisfactory for planting most types of terrain. It was found that sufficient tractor power

should be used so that a furrowing plow can be used on the front end of the tractor to skim the sod off and to push windfalls and slash out beyond the tractor tracks and out of the way of the planting machine."

With the belief that timbered property is not fully producing until all of it is growing trees, the cost of the company's planting program is fully justified, according to George Amidon, forest management officer.

"We attempt by every means possible to obtain natural reproduction on our lands without planting. However, if we do not have a stand growing, due to fire or past destructive logging practices, we plant to restore the idle acres to production," stated Mr. Amidon.

Although the tree planting program is only one part of the company's comprehensive forest management program, by the end of 1950 over 1700 acres were planted, mostly on lands which before 1936 were totally non-productive. Species of trees planted on these lands are jack pine, Norway pine and white spruce. More jack pine is being planted than any other species. In the future it is expected white spruce will predominate in planting. All three species do extremely well in the sand or clay upland soils.

In obtaining natural reproduction, methods vary with every individual stand. When the last harvest cuts are being made numerous seed trees are often left. In some of these areas disc plows have been used to cut down the brush and rip up the forest floor. Following this operation, natural reproduction has successfully occurred in many areas and planting has not been necessary. Some partial cutting methods have been employed, with a gradual opening up of the stand making conditions right for natural re-seeding before the entire forest floor is exposed by complete removal of the stand. In other areas natural regeneration occurs by merely leaving seed trees.

Although company foresters follow the best known methods of forest management, close touch is maintained with other forestry organization, such as the Minnesota Division of Forestry, the Lake States Forest Experiment Station, the U. S. Forest Service, and other companies inter-

Internationals and Lorains Speed Output

Logging operations in Ontario-Minnesota Pulp & Paper Co. Ltd.'s Patricia area, approximately 80 air miles northeast of the Kenora, Ont., paper mill, have been further mechanized. Nine new tractors and logging skidways ordered arrived and were put into service.

Other new equipment in the Patricia area consist of a 31-passenger Reo bus for transporting men to the cutting areas and returning them to camp daily, and the construction of a lumber and tie sawmill at the Cedar lake location. In addition, five 3-ton trucks were delivered.

The five new tractors, all International T. D. 9's, are being used to skid 8-foot logs from the slashers to the roadway. Purchased as part of a long-range modernization program, these powerful little haulers, with their heavy-duty skidways, assisted greatly in maintaining the production schedule. These five new T. D. 9's actually speeded up wood production by keeping slasher operations up to maximum capacity. Daily delivery of 500 cords was reached with the aid of the new equipment.

The completely mechanized process of logging, as it is practiced in the Patricia area, looks like this: Slasher saws in the bush cut tree-length logs into 8-foot lengths. These are then skidded by tractor and skidway to the roadway where a Lorain crane loads them on waiting trucks. From here the trucks haul the wood to the rail siding at Vermillion Bay, where the logs are picked up off the trucks by a powerful mobile crane and loaded into open gondola cars for shipment to Keewatin. Upon arrival at Keewatin, the cars are unloaded by a stationary crane which dumps the logs into the water. They are then towed in booms to Kenora bay by company tugs and sluiced into Rideout bay on the Winnipeg river, ready for their trip into the woodroom at the mill.

Thus, from the slashers deep in the woods, to their final climb up the Kenora jack-ladder, logs are hardly touched by human hands. This a far cry from the old days when husky jacks practically had to nurse every log all the way from the woods where it was cut, down through swirling rapids and across treacherous lake waters to the big mill.

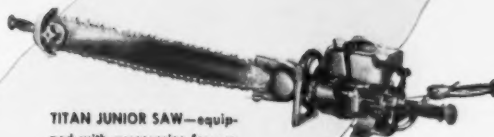
TITAN

BLUESTREAK

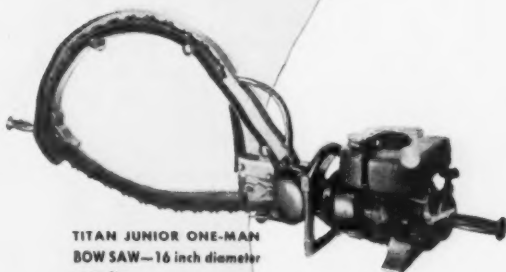
Has Everything!



TITAN JUNIOR ONE-MAN SAW—complete bar swivel, automatic clutch—5 H. P.



TITAN JUNIOR SAW—equipped with accessories for use by two men.



TITAN JUNIOR ONE-MAN BOW SAW—16 inch diameter capacity.

The complete TITAN line includes:

CHAIN SAWS—one and two-man—falling, bucking and bow attachments.

CHAINS—five types for every cutting need and every kind of wood.

BARs—five types, ranging in length from 2 to 12 feet on the two-man saw, including a thin bar, and from 18 to 44 inches on the one-man saw.

ALL CHAIN SAW ATTACHMENTS, accessories and parts.

The outstanding TITAN features include:

LIGHT WEIGHT—more power per pound.

NO VIBRATION—plenty of smooth power to carry the load.

LONG LIFE—vital parts are protected.

EVENLY BALANCED—easily handled and carried in the woods.

TEST RUN—all engines are fully tested and run under maximum load.

See Titan Chain Saws in operation before you buy.

Nationwide Sales and Service



TITAN AUTOMATIC BLUESTREAK TWO-MAN SAW—automatic clutch, two-cylinder, two-cycle, opposed type 12 H. P. motor.



TITAN CHAIN SAWS, Inc.
SEATTLE 4, WASHINGTON



TOP VIEW is typical of cutover forest area in Northern Minnesota which will be machine-planted. Notice how rough terrain is. **LOWER VIEW** shows stand of natural growth jack pine which is ready for first cutting. This stand is on M. & O. property near Effie, Minn. Thinning of this stand will make an excellent pulpwood harvest. Photos for PULP & PAPER by Jack Rotier.

ested in forestry-conservation activities. By such means the company keeps fully up-to-date on new methods and results of cutting. The company maintains a 1200-acre experimental forest for developing advanced cutting practices. They also cooperate with many of the above public and private agencies.

Example of Good Cutting

One example of this cooperation is the jack pine cutting experiment illustrated in a photo with this article. Figures gathered in connection with this experiment indicate in areas selectively cut, a growth of .75 cords per acre per year has been maintained from 1938 to 1950, while uncut area shows a growth of .43 cords per acre per year for the same period. This would indicate it is good business to cut jack pine in this fashion, if the trees are properly selected.

In developing their program, company officials considered public interest by serving the scenic roadside. Along each side of Highway No. 1, the old "Steel to Wheat" highway of the North, the company has maintained on its lands a strip of virgin pine, 200 feet wide. A virgin stand of Norway pine is also left, untouched, surrounding Bass Lake. This lake is opened to the public. Hunting and fishing is permitted, even though many company signs have been "peppered" by ungrateful hunters.

The Mando forest lands are provided with excellent fire protection through the facilities of the State Division of Forestry. This agency, which has primary responsibility in this area, is given full cooperation by the company, which provides heavy equipment, experienced fire fighters and skilled equipment operators. A powerful Beaver plane, especially designed for forestry work, and a modern FM radio network, hooking up headquarters, logging camps and company truck units, are of great assistance in fire control.

In addition, the company staff is active throughout the area in the "Keep Minnesota Green" movement, and in any other activities designed to prevent the occurrence of forest fires through educational means. Out of two million acres protected in timbered areas covered by company operations, only an average of 895 acres per year has been lost by burning.

The welfare of the employees has not been overlooked. "All the comforts of home" are enjoyed by lumberjacks. Camps are equipped with oil heat, individual showers, hot and cold running water, and recreation rooms, movies, etc.

It is obvious that the Minnesota & Ontario Paper Co. is intelligently planning sound, long-term operations. The company recognizes its lifeline is the "green gold" of the surrounding area.



Timber Surveys for M & O

Ontario-Minnesota Pulp & Paper Co., Ltd., M & O's Canadian subsidiary, is completing a very difficult long-term timber survey in two large sections of land north and east of the Fort Frances, Ont., mill.

One section is the Big Canoe area, a rectangular block of 130,000 acres situated northeast of North East Bay, Rainy Lake, bounded on the east by the 6th Meridian and on the north by the Manitou Concession. The second section comprises a 210,000 acre chunk of the Turtle area, west of the Seine Concession. The Turtle area is bounded on the west by the Big Turtle River and Tesup Lake, on the north by the Kenora-Rainy River district line, and on the south by the Canadian National Railroad.

Together, these two areas total approximately 340,000 acres or about 516 square miles of for-

est reserves for future pulpwood supply.

The Big Canoe-Turtle survey was under way for more than two years. Aerial photographs used in preparing ground maps of the two areas were taken in the fall of 1948 and spring of 1949 by the Ontario Department of Lands and Forests. Timber cruising and detailed mapping by a 9-man forestry crew followed.

It is expected that final results will be tabulated by early 1951.

Pollard Is Woods Manager

Lester E. Pollard, for 23 years with Minnesota & Ontario Paper Co., is woods manager for the logging division at International Falls, Minn. He was assistant for many years to Frank L. Bussman, who resigned about a year ago as division manager.

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more logs
per day
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You can get out more logs per day and per season . . . cut your logging costs . . . with an Oliver HG Crawler Tractor.

This husky little tractor with its twin aids to better logging . . . the hydraulic drawbar and hydraulically operated Imp dozer . . . gives your logging a big lift. The Imp dozer builds trails, repairs roads, pushes logs into position at the deck or in the woods. The tractor-dozer unit is small enough to get into practically inaccessible locations . . . powerful enough to handle a real load.

The hydraulic drawbar hauls out the logs with the butt ends in the air. The terrific resistance caused by the logs burying themselves as they are skidded is eliminated so you can handle a far bigger load. And, the operator never has to leave his seat. He simply drops the tongs over the load and lifts or lowers the logs with the hydraulic drawbar.

Check these aids to faster, more profitable logging for your operations. Your Oliver Industrial Distributor will be happy to give you all the facts. Or, if you prefer, write direct to The OLIVER Corporation, 19300 Euclid Avenue, Cleveland 17, Ohio.

Another effective Oliver aid to better logging is the Carco Winch and Logging Sully. This rubber tired unit helps you get out more logs with less time and effort.



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Industrial Division: 19300 Euclid Avenue, Cleveland 17, Ohio
A complete line of crawler and industrial wheel tractors

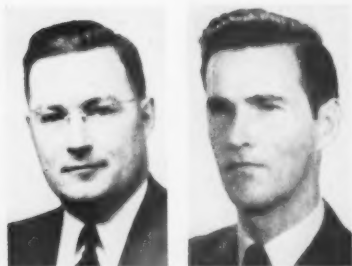


"THE SIGN OF
EXTRA SERVICE"



NEW PROCESS IS SUCCESSFUL

Solves Air Problem in Canadian Mill



WILLIAM W. HICKEY (left), President, and JAMES A. SMITH (right), Vice President, of Rotaread Corp., 81 Pondfield Road, Bronxville 8, New York. This company was formed to engineer and install the Deculator, new equipment and process for air removal from stock ahead of the headbox.

A problem as old as the paper industry itself—the effects of air in pulp stock—has been solved.

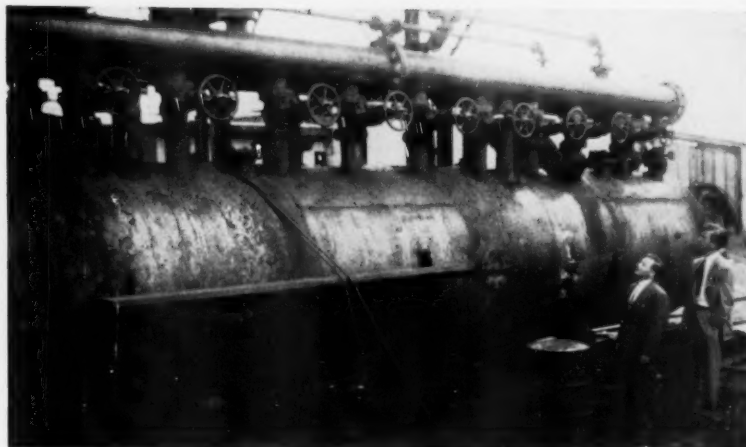
How new equipment and a new process called the Deculator was pioneered in co-operation with Canadian International Paper Co. and now with other paper companies in the U. S. and how it has been successfully demonstrated in actual mill operation is revealed exclusively in this interview with William W. Hickey, president of The Rotaread Corp. This is a new company formed for manufacture of the equipment and installation and introduction of the process, both of which bear the name—the Deculator.

The system and equipment was first mentioned in the Nov. 1950 issue of *PULP & PAPER* in a brief summary of a report at the Cincinnati Engineers Conference on "Air Removal from Stock Ahead of the Headbox." The Deculator is installed just ahead of the headbox, or for newsprint, just after screens.

Not only does the Deculator effectively eliminate air in stock, Mr. Hickey states, but it imparts a number of advantages, all of them part and parcel of an air-less paper stock which the industry has sought for decades. For example, there is a smoother, more uniform sheet from the machine, with less air permeability, and such production advantages as reduced machine down time and a drier sheet leaving the couch roll.

The first commercial application definitely indicated an increased drainage rate of the stock, but there was no appreciable change in headbox consistency. A reduction in porosity by the Gurley densometer test was noted and fewer wet end breaks were encountered due to a marked reduction of lumps and slime.

The production increase on newsprint due to improved wet end operation and a reduction in down time averaged 2.4% in the Three Rivers, Quebec, mill of Cana-



A DECULATOR, recently developed equipment, and a new process for removal of air from stock ahead of headbox. This Deculator, ready for shipment for installation in a mill, is being inspected by W. W. HICKEY (left), President of Rotaread Corp.; and CARLETON L. CLARK (right), of Clark & Vicario, pulp and paper engineers, sales agents for the Deculator and principal designers. Their new headquarters also are in Bronxville, N. Y.

dian International Paper Co., where the first full scale operating installation has been producing high-grade newsprint for approximately ten months. The results outlined briefly here were obtained while using a conventional open headbox on a standard width newsprint machine running 1200 feet per minute. The speed of this particular machine is limited at the present time by the drive.

Installations in U. S. Mills

Stocks other than newsprint have been successfully deaerated by the Deculator. *PULP & PAPER* has been advised that another full-size installation will be operating shortly at a paper mill manufacturing book in eastern United States. Laboratory tests have been conducted with success on sulphate and semi-chemical kraft. A full scale installation of this type is currently being made in one of the Southern mills in the U. S. and will be followed shortly by an installation on a machine producing butter and milk carton grades. Early in 1951 there will be three more full scale installations in Canada on machines making newsprint up to 1600 feet per minute. There will also be an installation during 1951 on a newsprint machine in Finland.

The name of the new process and the equipment pays tribute to ideas put forth some years ago by Judson A. DeCew, a Canadian widely known in the paper manufacturing industry, who is now retired and residing in Mt. Vernon, N. Y. However, according to Mr. Hickey, the fullest credit for the development of this process goes to Messrs. C. L. Clark and Carlo Vicario, pulp and paper engineers, whose headquarters, along with those of

The Rotaread Corp., now are at 81 Pondfield Road, Bronxville, N. Y. These two men have assigned patents and patent applications to The Rotaread Corp., and their firm, Clark and Vicario Co., is at present the exclusive sales representative for the corporation in most of the U. S.

Pioneer Work at Gatineau

They, as well as Mr. Hickey, also give much credit to Canadian International Paper Co., which joined forces with them in experimental work which went on for more than two years at the Gatineau laboratory. Particularly interested in this problem were W. T. Bennett, chief engineer, and Dr. R. D. Duncan, director of newsprint research, both of Canadian International Paper Co. The Rotaread officials give credit as well, for the more recent interest of other mills producing different types of paper.

When the Three Rivers installation was operating and the initial problems were licked to the satisfaction of all, The Rotaread Corp. was formed early in 1950, with Mr. Hickey and Mr. J. A. Smith as officers, and Messrs. C. J. Lyons, C. L. Clark, and C. Vicario as directors. The company has proceeded since then with a minimum of public notice for it wanted to be confident of the Deculator's results in a wide variety of deaeration problems.

"What we find most interesting of all," states Mr. Hickey in his interview with *PULP & PAPER*, "is that the majority of the advantages resulting from the removal of air from stock in the headbox, suspected for years by papermakers, have been realized in our commercial Deculator installations."

"If there has appeared to be any secrecy

concerning the Deculator," Mr. Hickey stated, "it was only because of a desire on the part of all concerned to prove its adaptability to several kinds of paper prior to making the process public. Experiments will be carried on with reference to the use of this process in mills producing pulp only. However, no announcements will be made on this until it, too, has been given rigorous tests."

Mr. Hickey is emphatic on the point that the Deculator deaeration system is not only mechanical equipment, but is a process involving individual design and engineering for each installation, with particular reference given to stock temperatures, headbox consistencies, pH, headbox flow characteristics, grades of stock, percentages of air in stock, and, of course, the location of the existing equipment in relation to the Deculator process.

James A. Smith, vice president of Rotaread, recently pointed out to a group of technical men that the effects of air in stock on the machine operation and on the quality of the sheet have been the subject of much speculation and considerable investigative work. Various methods to remove air from solutions have been available in the laboratory, and various attempts to remove air by relatively low vacuums above the stock have not been completely successful. It has been shown,

however, that the presence of air on the fibers has a direct effect on paper formation.

With the Deculator the stock is taken from the stock header just prior to the headbox and in the case of newsprint immediately after screening. It is introduced into a large receiver in which is maintained an extremely high vacuum close to the saturation pressure corresponding to the temperature of the stock being handled. The deaerated stock is pumped by a fan pump out of the Deculator receiver directly into the headbox. High vacuum in conjunction with the rapid acceleration of the finely divided stock and the impingement of this stock at high velocity against hard surfaces result in the complete removal of all measurable air from the paper stock. Evidence of this is revealed by the commercial test and production sheets now in the files of Rotaread in Bronxville.

The experiments to date indicate that the Deculator is advantageous irrespective of the type of headbox used, for it has been operated with a conventional open headbox, as well as with an air loaded pressure type.

As Mr. Hickey puts it, "with the installation of a Deculator a paper mill can refer to air in stock in the headbox in the past tense."

H. & W. Promotions

James L. Madden, president of Hollingsworth & Whitney Co., announces its directors have elected W. Elliott Pratt, Jr., of Wellesley Hills, Mass., treasurer of the company. Mr. Pratt has been a director since 1939 and assistant treasurer since 1945. He succeeds Harry C. Thayer, who retires after 60 years with the company.

Dennis E. Cousins, mill manager at Mobile, Ala., since that mill began operation in 1940, was elected a vice president.

Mr. Madden also announces promotion of Frederick Goodridge to assistant vice president.

Sutherland Sales Chief

Harlan T. Longnecker has been appointed manager of sales of Division C of Sutherland Paper Co., Kalamazoo, Mich., to fill the vacancy caused by the recent death of Leo J. Dickey. Mr. Longnecker joined Sutherland in 1937, serving in the sales department in various capacities. In 1943 he was made assistant manager of Sales Division C.

P. T. DICKIE, assistant technical supervisor, Crown Zellerbach Corp., West Linn, Ore., and Commander in the naval reserves, recently became senior officer of the organized naval reserve unit in Portland, Ore. Commander Dickie served in World War II at Iwo Jima and Okinawa.



"UNION" STAINLESS METAL SCREEN PLATES

Years of outstanding service in pulp and paper mills in the United States and Canada have proven the superiority and dependability of Stainless Metal Screen Plates made by Union Screen Plate Company. Available in styles and types for all purposes, for both flat and rotary screens.

"UNION" can also supply Screen Plates of the following types in any style of cut or number of slots per inch —

CHROMIUM PLATED	CAST BRONZE
PHOSPHOR BRONZE	ROLLED COPPER

UNION SCREEN PLATE CO. OF CANADA, LTD.

Lennoxville, Que., Canada

... for the answers
to ALL your
**CORROSION-RESISTANT
PIPING PROBLEMS**



(Left and Right) Two examples of standard butt-welded fittings furnished in flanged assemblies. By using standard Tri-Clover fittings, we can often solve many "special" problems with a minimum of extra fabrication. Send for Catalog 748 covering the standard "Zephyr-weld" fitting line.



(Right) Special 16" Inlet Header for paper mill job fabricated of type 304 Stainless Steel, with 26 3" IPS connections, using Van Stone Flanges.



(Left and Right) 24 inch O.D. Tri-Clover welding fittings of mitre-joint construction—further examples of the special fabrication available to meet individual requirements. While standard Tri-Clover fittings incorporate streamlined "sweep" construction, we are equipped to fabricate practically any other type, in sizes through 36" O.D.



TRI-CLOVER offers you the best *one source* of supply for all your corrosion-resistant piping problems. Our specialized experience in alloy fabrication is your assurance of best results and lower over-all cost in the long run. When it comes to expert welding, fabricating and annealing of complex assemblies, you just can't beat the speed and accuracy offered with TRI-CLOVER'S exclusive Heli-Arc Atomic Hydrogen Welding... a specialized semi-automatic process that assures highest quality and FULL corrosion resistance.

TRI-CLOVER fittings are now being used in mills operated by West Virginia Pulp & Paper, Champion, Marathon, Dexter, International, Southland, and others. *Let our corrosion specialists furnish detailed recommendations covering fittings and special prefabricated assemblies to meet your specific requirements. Send us your layout sketches.*

EXPORT DIVISION 8 So. Michigan Ave., Chicago 3, U.S.A.

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MACHINE CO.

Kenosha, Wisconsin

TRI-ALLOY AND STAINLESS STEEL
SANITARY FITTINGS, VALVES,
PUMPS, TUBING, SPECIALTIES



FABRICATED STAINLESS STEEL
INDUSTRIAL FITTINGS AND
INDUSTRIAL PUMPS

THE Complete LINE

**U. S. View on Swedish
Export Tax on Pulp**

The proposed export tax on Swedish pulp, a part of the design against inflationary tendencies all over the western powers world, was still under scrutiny by the U. S. industry in January. Although making the reservation that his comment was tentative, late in December the president of the American importers' group, Stanford Blankenship, vice-president of Perkins-Goodwin Co., New York, said he believed the tonnage of Swedish pulp available after the first quarter might be so low as to make academic the question of the effect here.

Further regarding U. S. over-all supply, members of the OEEC Pulp Committee, here to discuss more pulp for Europe, said they had not been influenced in their demands by over-optimistic statistics on pulp inventory published widely late in 1950. "We have based our requests on needs," a spokesman for the OEEC said. "They were calculated before the year-end forecast you mention."

HELP WANTED

General Converting Foreman for Southern Kraft Mill to supervise operation of sheet cutters, rewinders, bag and gumming machines. Experience in all lines desirable but not necessary. Application should contain complete summary of experience, education, etc. Excellent location and climate. Please reply to Box P&P-88, c/o PULP & PAPER, 71 Columbia Street, Seattle 4, Wash.

WANTED

Engineering draftsmen for drawing board work on heavy machinery. Men with paper mill experience preferred. State age, experience and salary expected.

The BAGLEY & SEWALL COMPANY
Watertown, New York
Phone 1200

WANTED—USED MOTORS

2—150 or 175 H.P. 440 volt, 3 phase, 60 cycle, 450 RPM motors, including starting compensators and contactor boards. Exciters not needed.

or

2—175 H.P. squirrel cage 440 volt, 3 phase, 60 cycle, 450 RPM motors, with starting compensators.

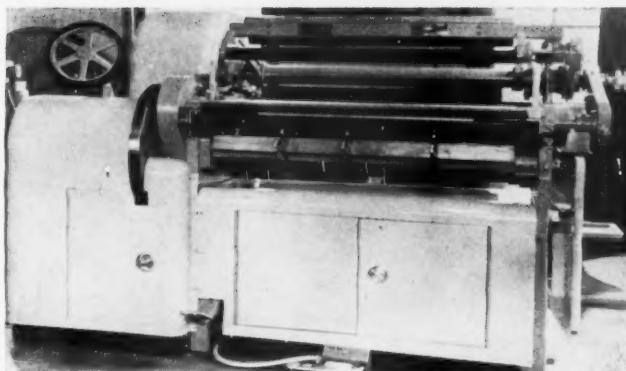
We can offer for sale or exchange two 550 volt motors to be released after purchase and installation of the 440 volt motors. Further details on request. In replying please give full information on 440 volt motors, including price. Please reply to P&P Box No. 89, c/o PULP & PAPER, 71 Columbia Street, Seattle 4, Wash.

Manhattan Rubber

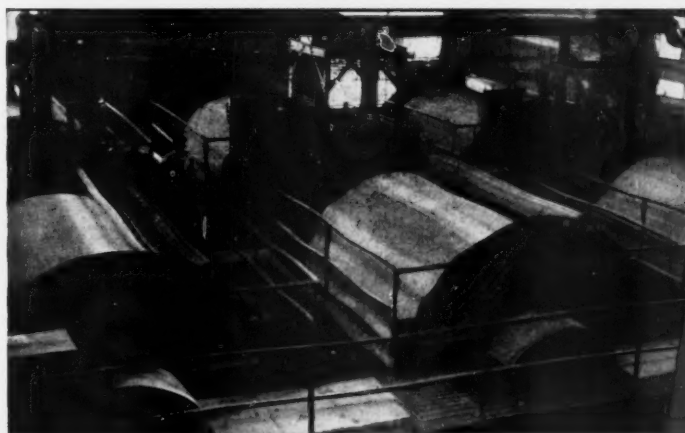
"Safety First Rates Supreme, Working Alone or in a Team" was selected as the best slogan in a contest at the Passaic, N. J., plant of Manhattan Rubber Division, Raybestos-Manhattan, Inc. Its author, Fred Mondon, a pressman, was presented with \$100 by R. J. Gorecki, factory manager.

Sensitized Coaters Move

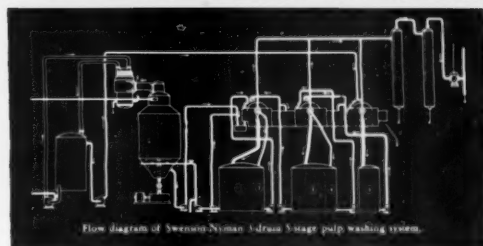
According to a dependable nationwide survey, industrial concerns last year spent 50 millions for relocation out of congested areas, and the trend is most noticeable in the New York area. Among five East Coast companies recently announcing moves in this category is Charles Bruning Co., makers of sensitized coated paper, which has started a new plant at Teterboro, N. J.



THE NEW CAMACHINE, Type 40-1DF, built by Cameron Machine Co., Brooklyn, N. Y., for converting short length rolls. Capable of speeds up to 600 f.p.m., equipped with an electrically operated riding roll lift. Completely enclosed for safety. Storage cabinet for tools and equipment below.



**PULP IS
WASHED
CLEANER**
with
**Swenson-Nyman
Equipment**



REDUCES DILUTION through multistage operation
CUTS STEAM COSTS by reducing evaporator loads
ELIMINATES SEWER LOSS because it operates as a closed system

REDUCES SALT CAKE LOSS to the small amount (20 to 50 lb per ton) passing through with pulp

Send for Bulletin E-108

- Evaporators
- Pulp Washers • Deckers • Filters
- Digester Blow Condensers
- Surface Condensers
- Turpentine Condensers • Causticizers

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47-49 LaPlante Ave., Toronto 2

DISPOSAL PIPELINES

(Continued from Page 55)

liquor concentration of 1-to-20,000 at lowest stages of river flow, the system meets specifications endorsed by Washington State's Pollution Control Commission. The Commission has specified desirability of reducing concentration of S.W.L. below 50 p.p.m. in order to control growth of fungus in the river and be harmless to fish life.

American Pipe & Construction Co. of Portland, Ore., fabricated all the piping for the entire system, Amercoating all piping on the outside. J. H. Pomeroy & Co., Inc., were contractors for the installation.

The half-mile of 30-in. rubber-lined pipe, lined by Griffith Rubber Mills, extends from the Bingham pump overhead through the ground floor of the finishing-room building, then under the S.P.&S. railway tracks, and continues to the bank

of Camas Slough on structural steel supports. At the edge of the slough the pipe goes underground for crossing under water to Lady Island 900 ft. distant. The pipe on the slough bottom was ditched in and back filled. The 3500 ft. open ditch carrying the dilute S.W.L. across Lady Island terminates at the final 760 ft. section of rubber-lined 30-in. pipe, from which the S.W.L. discharges through eleven 10-in. discharge pipes on 30-ft. centers at terminal end of the final section, thus giving dispersal over a 300 ft. cross section in the river's midstream.

The Everett Pipeline

Work is rapidly progressing on the \$609,000 wood-stave pipeline with stainless steel fittings, joints and bands which, with approval of the Washington State Pollution Commission, will carry the sulfite waste liquor from Soundview Pulp Co. and Weyerhaeuser Timber Co.'s pulp mill in Everett, Wash., to a point 3,000 feet

from the shoreline. Depth at the final outlet will be 330 ft. at mean low tides, but there will be outlets for the last 1,000 ft. to avoid concentrated discharge so that oxygen content of waters near the surface will be nearly, if not completely, normal.

Authorities state that the pipeline will prevent any depletion whatsoever in oxygen content of waters at the mouth of the Snohomish River, some distance north of the mills, where fish go upstream to spawn and small fish return to sea.

Daily sulfite pulp capacity for the two mills is 850 tons.

Leo S. Burdon, vice president and general manager of Soundview, and Russell J. LeRoux, manager of the Weyerhaeuser operation, made a joint announcement of the project. L. M. Johnson, chief engineer at Soundview, and L. E. Hill, Jr., Weyerhaeuser's plant engineer, are in direct charge for the mills.

From Soundview's pulp mill the line is two miles long. It is considerably shorter from the other mill, as they join in a single pipeline in the Weyerhaeuser mill yard. Two Bingham Pump Co. vertical pumps at Soundview and one Bingham pump at Weyerhaeuser are important units at initial accumulating points.

Electric Steel Foundry Co., of Portland, Ore., is supplying fabricated stainless steel ball and socket joints and stainless bands for the 3,000 ft. of underwater pipe, 30 inches in diameter. Stainless fittings for pipeline before it goes into the water are being supplied by Alaskan Copper Works of Seattle and Eckstrom Sheet Metal Works of Everett.

The entire wood-stave pipeline and a wood-stave large surge tank at high tide line on the shore at the point of entry into the salt water are being constructed by Federal Pipe and Tank Co., Seattle. Manson Construction and Engineering Co. of Seattle is putting down the line in salt water, which calls for specialized underwater work. E. R. Johnson of Everett is contractor for land lines. Howard S. Wright Co. of Seattle is installing pumps and liquor collection piping in the Soundview mill.

The two lines from the mills join 1,600 ft. on the land side of the surge tank location. It is 24-inch wood stave piping to this point, 30 inches thereafter. All pipe is being encased in six inches of concrete to help prevent leaks and protect it against surface loads. Stainless fittings for connections will protect against corrosion.

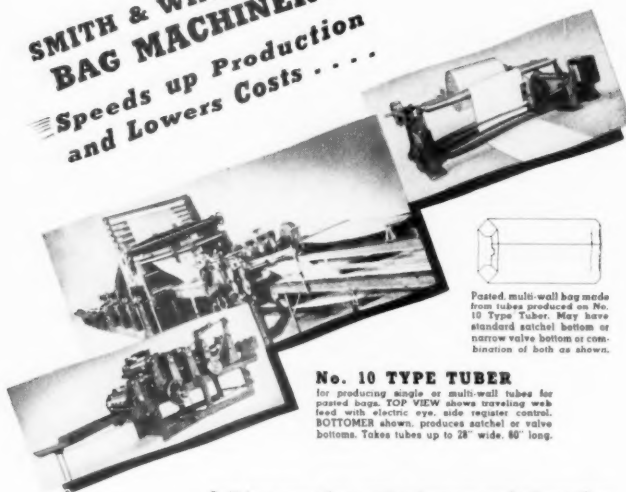
Standpipes are arranged so volume of discharge at outlets in the last 1,000 ft. will be reasonably uniform.

The project is scheduled for completion early this spring, but war emergencies may delay this first flow of liquor through the line till a little later.

Swiss Writes of U. S. Mills

A booklet describing "The Paper Industry of the United States" from the point of view of a Swiss observer, has been sent to this magazine by the author, Dr. Werner Lanz, secretary of Verbandes Schweiz, Papier- und -Papierstoff Fabrikannten, Barenplatz 2, Bern, Switzerland.

SMITH & WINCHESTER BAG MACHINERY Speeds up Production and Lowers Costs . . .



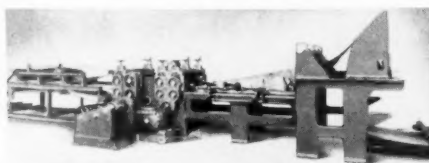
No. 10 TYPE TUBER

for producing single or multi-wall tubes for pasted bags. TOP VIEW shows traveling web lead with electric eye, side register control. BOTTOMER shown, produces satchel or valve bottoms. Takes tubes up to 28" wide, 80' long.

Built for present day needs to increase production, reduce spoilage and lower unit costs. These machines are custom-made to your requirements and will give continuous, trouble-free service. Increase your profits by speeding up production with Smith & Winchester equipment.



Multi-wall, sewed valve type, gusseted tube made on Smith & Winchester Multi-wall Tuber.



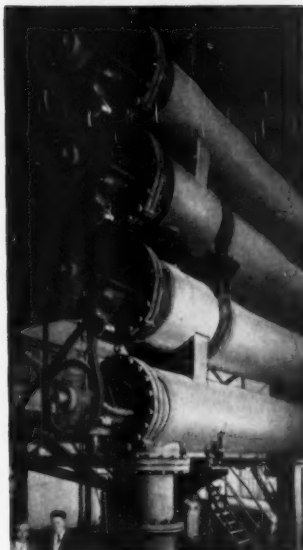
S & W MULTI-WALL TUBER

Up to 100,000 valve notch tubes each 8-hour day may be produced on this Multi-wall Tuber for sewed valve bags. One to 6 walls. Machine built in 2 sizes, 20" and 28" face. Up to 6" gussets. Tubes 25" to 50" long. Improved cross pasting units, photo-electric compensating drives and flying splice paper roll stands can be furnished. If you have a bag problem write us.

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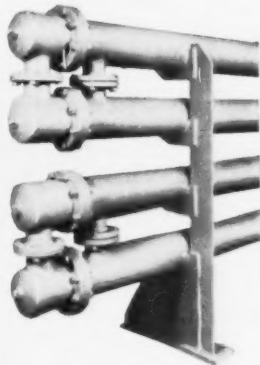
SERVING THE PAPER INDUSTRY SINCE 1828

Semichemical Process Introduced in France



Above photograph is Chemipulper unit recently installed at Cenpa Co. plant, Begles, France. The equipment was manufactured and installed by Paper and Industrial Appliances, Inc., 122 E. 42nd St., New York 17. M. Combs, technical director of Cenpa, is at lower left. R. G. Goodwin, engineer of Paper and Industrial Appliances, Inc., is at lower right.

The Chemipulper was purchased by Cenpa for the purpose of using waste woods for making pulps. France is short of many grades of pulp and the Chemipulper is a step towards helping France become more independent of outside



**Stainless Steel
Spray Liquor Coolers
for
Absorption and Cooling
Towers**

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Full Contra-Flow Multi-pass
Heat Exchanger Assembly

ALASKAN COPPER WORKS
DESIGNERS and FABRICATORS
"Since 1913"

Seattle Wash.

sources. The waste wood is all hardwood and comes from a sawmill and is used for corrugating board. Cenpa also plans to use high yield hardwood semichemical pulps produced in the Chemipulper in other grades, such as liner board and bag paper. The Chemipulper is using a kraft liquor with low sulfidity, required by the neighboring city of Bordeaux.

They expect in the near future to use a liquor with sulfidity more in line with use in America.

Chemipulper stock is pumped from a cyclone to Sutherland Refiner and then to a Fourdrinier wet lap machine, then by conveyor to storage. The process is continuous, without the use of any chests.

ENLARGES FACILITIES FOR SERVING U.S. GOVERNMENT NEEDS

Enlargement of Bulkley, Dunton's facilities to serve paper buying needs of the government is announced by J. C. Marvin, vice president (shown in picture). This will involve direct representation in Washington, D. C., serving the Government Printing Office, the Federal Supply Service, the Treasury Department and the Army Map Service. Rapid growth of Bulkley, Dunton's sales in this field has also necessitated expansion of the New York staff which has been serving the Quartermaster, Navy and Marine Corps and the Federal Supply Service in that city.

Contact in Washington will be through William J. Calabrese, who has recently joined Bulkley, Dunton. Mr. Calabrese was formerly purchasing agent of fine and printing papers at the New York Quartermaster, and has had over 20 years in the paper industry. According to J. M. Harkins, who supervises Bulkley, Dunton's Government Sales and Service Division, the requirements in this highly specialized field are growing in volume and getting more complex.



A LARGE LUMBER PRODUCER in the Southern part of the United States who is a client of ours is desirous of adding to their executive management. The company has a long timber life, modern plant, and an aggressive marketing policy. A man who is unable to reach the top in his present location is offered the chance to achieve that advancement. Need not necessarily be in top position now but should show growth possibilities. Should be seasoned in a position where he is qualified in logging, manufacturing, and marketing.

State thoroughly and completely your qualifications to us. All conferences will be extremely confidential to allow full and free discussion.

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FOR PULP AND PAPER MILLS

PHOSPHOR BRONZE - MONEL - STAINLESS STEEL

AVAILABLE IN A BROAD RANGE OF CONSTRUCTIONS
AND ALLOYS FOR CYLINDER FACES, SAVE-ALLS,
DECKERS AND THICKENERS, FILTERS AND WASHERS

Pacific Coast Supply Company
PORTLAND, OREGON • SAN FRANCISCO, CALIFORNIA

Personals

News About Industry People From Coast to Coast

TAYLOR ALEXANDER, until recently with Oregon Pulp & Paper Co. as vice president in charge of its lumber and timber division, has been appointed vice president of M & M Wood Working Co., Portland, Ore., in charge of its timber and raw materials division. This new office includes management of the organization's 2.5 billion feet of timber in Oregon and Northern California, and procurement of logs for four plywood plants and a sawmill, lumber for two door plants and hardwood veneer for the Portland plywood division.

W. W. GRIEST has been promoted to statistician of The Gardner Board and Carton Co., Middletown, O., according to Floyd W. Lockard, controller. Mr. Griest has been with the firm for 25 years.

LOGAN MAYHEW, vice president of Sidney Roofing & Paper Co., Victoria, B. C., has been elected chairman of the executive committee of the Western Branch, Canadian Pulp and Paper Association, with **G. D. HUMPHREY**, assistant manager, B. C. Pulp & Paper Co., as vice chairman.

BOYD DAUGHERTY, for many years head of the Bemis Bro. Bag Co. sales office in New York, died Dec. 30 at Port Washington, Long Island. Mr. Daugherty, better known as "Pat" among his friends, resigned in March, 1945 due to ill health.

F. S. MORGAN was appointed plant engineer of St. Helens Pulp & Paper Co., St. Helens, Ore., in December, according to **MAX R. OBERDORFER**, executive vice president. The plant engineer, a new position in St. Helens, is in charge of power supply and all phases of construction and maintenance. For the past year Mr. Morgan has headed the plant engineering department.

JOHN P. McMULLEN, personnel and safety director at Pacific Coast Paper Mills of Washington, Bellingham, Wash., and a Fordham alumnus, has recovered fully from a recent kidney ailment and fortunately, did not require surgery.

CLARK BANE DAVIS, Pittsburgh-born forester who left the U. S. Forest Service on his return from war service with the AEF in 1919 to join Abitibi Power & Paper Co., has been appointed vice president of that company, in charge of woodlands. He has been in charge of Abitibi's woodlands department since 1943.

MAX L. MANGER, of mechanical department, Crown Zellerbach Corp., Camas, Wash., received \$145 check for contributing the idea of an endless belt on a Reeves drive.

ERWIN B. MARTIN, Minnesota and Ontario Paper Company, Chicago, is a new member of the Salesmen's Association of the Paper Industry. The New York salesmen heard this summer from the Army which said all armed forces paper supplies have been assigned to the Army Quartermaster Corps, completing centralization of procurement for all paper products. New York quartermaster procurement agency spent a peace-time high of \$31,-900,000 during the fiscal year ending June 1949.

CHARLES O. RADER of Bridgeport, Conn., is new general sales manager and Daniel P. Abercrombie, Jr. of Darien, Conn., is new eastern sales manager of the Brightwater Paper Co., Adams, Mass., according to Henry J. Guild, president.

DAVID D. REEVE, formerly resident engineer at Abitibi Power & Paper Co.'s paper mill at Fort William, has returned to his home in Vancouver, B. C., to join an engineering consultant firm. He has served with B. C. Pulp & Paper Co., Bloedel, Stewart & Welch, Quebec North Shore and Abitibi in Smooth Rock Falls.

F. W. LOCKHARD, controller of Gardner Board & Carton, Middletown, O., and **J. EARL PRES-SON**, controller of Central Fibre Products Co., Quincy, Ill., have joined the Controllers Institute of America.

C. L. CARNS, Weyerhaeuser Timber Co., Longview, Wash., has been transferred from plant engineering staff to project engineering staff as assistant to **G. F. ALCORN**, engineer in charge of the new kraft mill addition. Also on the project engineering staff are **ED. PORTER**, from plant engineering, and **MERRILL ROBINSON**, of the company's Springfield, Ore., engineering staff.

- - SAVE THIS TABLE FOR REFERENCE USE - -

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THIS IS NO TIME TO SUBSTITUTE "EXPERIMENT" FOR "EXPERIENCE"

Stebbins "Know-how" is based on sixty-seven years of designing, installing and maintaining corrosion-resistant linings, stock chests and other chemical process vessels.

SULPHITE MILL

Sulphur burner linings
Combustion chamber linings
Acid tower linings
Acid storage tanks
Settling tank linings
Calcium digester linings
Soluble base digester linings
Bleach plant tanks and linings

PAPER MILL

Special process chests
Stock storage chests
Wire and couch pit linings

KRAFT or SEMI-CHEMICAL MILL

Combustion chamber linings
Absorption tower linings
Bleach plant chests and linings
Digester linings

CHEMICAL PLANTS

Acid and alkali storage tanks
Pickling tanks
Tower linings

When you run into a problem in any of the above, drop us a line. There is no substitute for "Know-how" based on years of experience.



Stebbins Engineering Corporation

TEXTILE TOWER

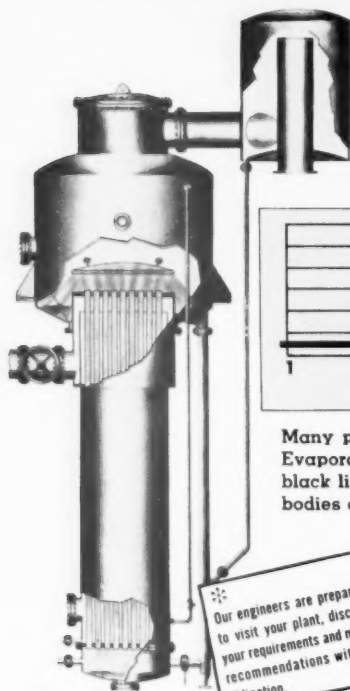
SEATTLE 1, WASHINGTON

SEMD

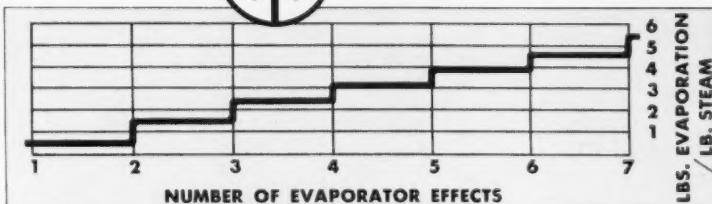
THERE'S PROFIT IN WASTE UTILIZATION WITH THE SUMNER REFUSE HOG

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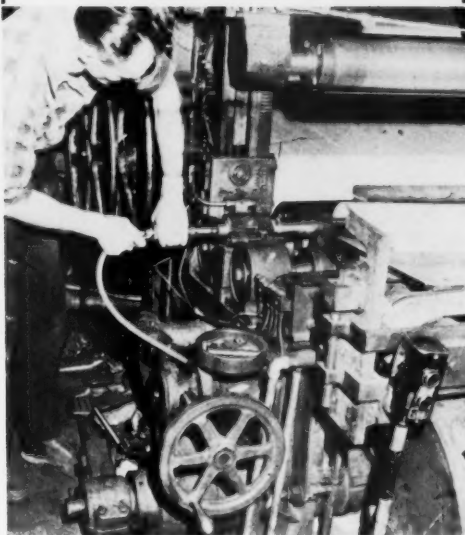
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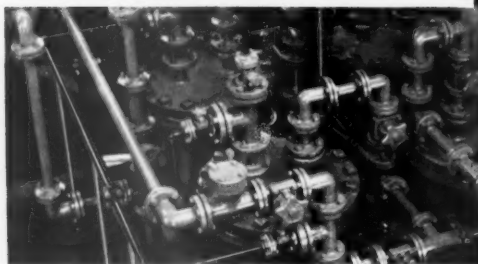
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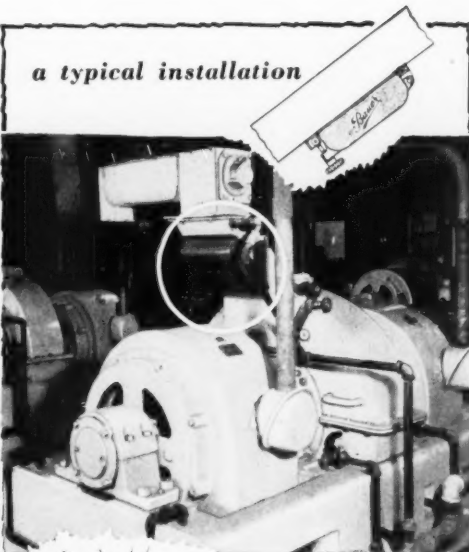
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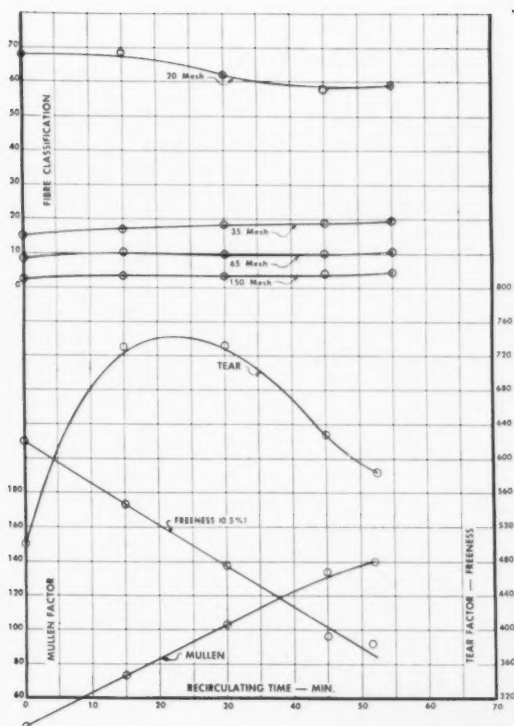
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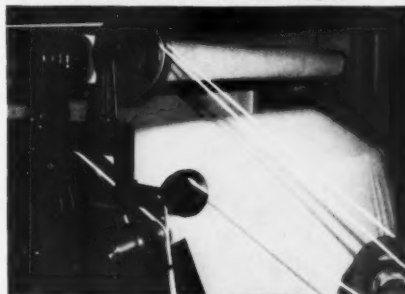
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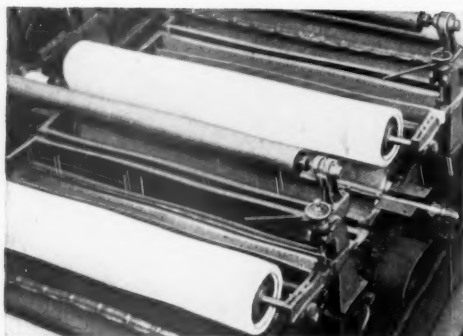
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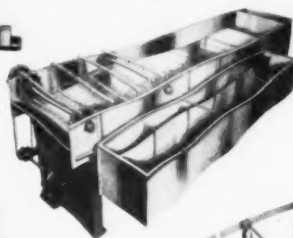
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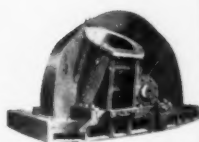
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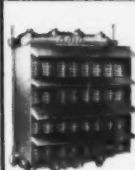


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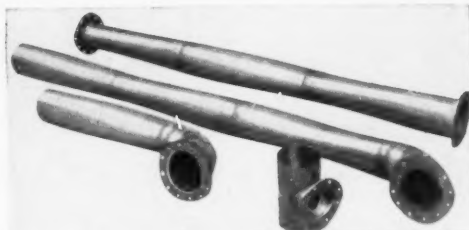
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1. Structure and Properties of Pulp-wood
Structural, Microscopic, and Physical Properties of Wood
Composition and Chemical Properties of Wood
2. Preparation of Pulpwood
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5. Manufacture of Alkaline-process Pulp
General Discussion
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6. Treatment of Pulp
7. Bleaching of Wood Pulp
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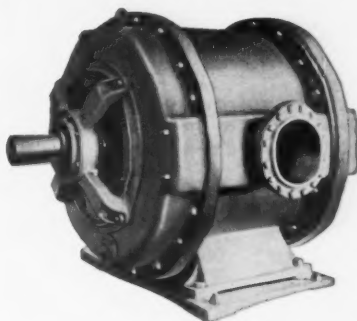
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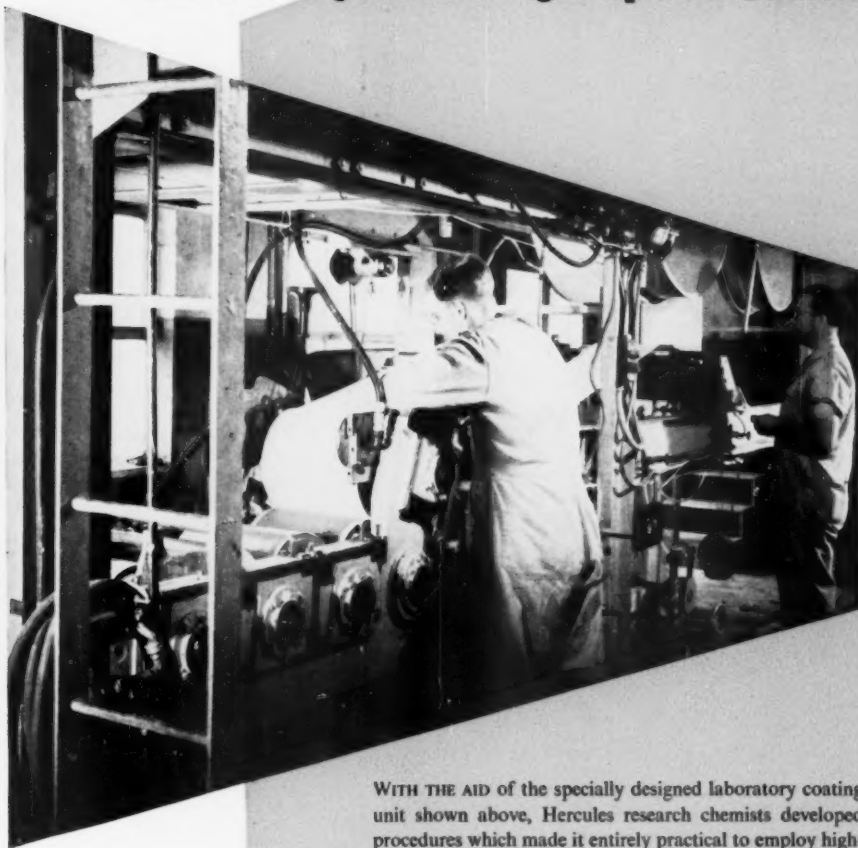
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